Academic Rules and Regulations for M.Tech Programme

The M.Tech Degree of Sri Vasavi Engineering College (Autonomous), Pedatadepalli, Tadepalligudem, under Jawaharlal Nehru Technological University Kakinada shall be conferred on candidates who are admitted to the programme and fulfill all the requirements for the award of the Degree.

1.0   ELIGIBILITY FOR ADMISSIONS:

Admission to the above programme shall be made subject to eligibility criteria, qualification and specialization as prescribed from time to time.

Admissions shall be made on the basis of merit/rank obtained by the candidates at the Qualifying Examination/Entrance Test conducted by the University/Government or on the basis of any other order of merit as approved by the University/ Government subject to reservations as laid down by the Govt. from time to time.

1.1   ADMISSIONS UNDER SPECIAL CASES:

These may arise in the following situations.

4. When a student gets detained due to academic regulations and re-joins the college to complete the programme in a new regulation.

5. When a student discontinues for some time and re-joins the college to complete the programme in a new regulation.

6. When a student seeks transfer from other colleges to SVEC and intends to pursue M.Tech programme in the eligible branch of study.

    These admissions may be permitted by the College Academic Council as per the norms stipulated by the statutory bodies and the Government of Andhra Pradesh from time-to-time.

    In all such cases for admission if necessary permissions from the statutory bodies are to be obtained and the programme of study at the college will be governed by the transitory regulations stipulated in **12.0.**

    An under taking from the students is to be taken at the time of admission stating that they would abide by the transitory regulations specified by the authorities if there is any change in the regulations.

2.0   AWARD OF M.Tech DEGREE:

    i. A student shall be declared eligible for the award of the M. Tech Degree, if he pursues programme of study in not less than two and not more than four academic years.

   ii. The student shall register for all 70 credits and secure all the 70 credits.

  iii. The duration of each semester including examinations is 21 weeks.

3.0   SPECIALIZATION:

  The following specializations are offered at present for the M. Tech programme

    a) M.Tech- Structural Engineering

    b) M.Tech- Power System Control & Automation

    c) M.Tech- Machine Design

    d) M.Tech- VLSI & Embedded Systems

    e) M.Tech- Computer Science & Engineering

4.0   ATTENDANCE:

A student is eligible to write the semester end examinations (SEE) if he/she acquires a minimum of 75% of attendance in aggregate of all the courses of that semester put together.

4.1   Condonation of shortage of attendance in aggregate up to 10% (65% and above **but** below 75%) in a given semester may be granted by the College Academic Committee on medical grounds provided the student has submitted the application for medical leave along with medical certificate from a Registered medical practitioner within three days form reporting to the class work after the expiry of the medical leave. However, a student can avail this concession on medical grounds for not more than once during entire duration of the programme.

4.2   A student representing the college in approved extracurricular activities such as sports, games, cultural meets, seminars, workshops and conferences shall be considered as on duty provided he/she has obtained prior written permission from the head of the department concerned and also submitted the certification of participation from the organizer of the event within three days after the completion of the event. However, this period of absence shall be counted as present for the purpose of computation of attendance only.

4.3   A stipulated fee shall be payable towards condonation of shortage of attendance.

4.4   Attendance below 65% in aggregate shall not be condoned under any circumstances.

4.5 Students whose shortage of attendance is not condoned in any semester are not eligible to write their semester end examinations.

4.6 A student who is in short of attendance in a semester may seek re-admission into that semester when offered again, within 1 week from the date of the commencement of class work.

4.7 A student will be promoted to the next semester if he satisfies the attendance requirement of the present semester.

4.8 If any candidate fulfills the attendance requirement in the present semester, he shall not be eligible for readmission into the same class.

5.0 EVALUATION:

The performance of the candidate in each semester shall be evaluated course-wise, with a maximum of 100 marks for theory and 100 marks for practicals, on the basis of Internal Evaluation (IE) and End Semester Examination.

Theory Courses:

i. For the theory courses 60 marks shall be awarded based on the performance in the End Semester Examination and 40 marks shall be awarded based on the Internal Evaluation. The internal evaluation shall be made based on the average of the marks secured in the two Mid Term-Examinations conducted-one in the middle of the Semester and the other immediately after the completion of instruction.

ii. Each Mid-term examination shall be conducted for 30 marks and duration of 120 minutes with 3 questions (without choice), each question for 10 marks.
The balance 10 marks is earmarked for alternate assessment tool like assignments etc.,

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Internal Evaluation= Average of two mid examinations (30)+AAT (10)

End Semester Examination shall be conducted for 60 marks.

There will be 5 questions with internal choice covering the entire syllabus. The student has to answer all the questions.

Practical Courses:

For practical course, 60 marks shall be awarded based on the performance in the End Semester Examination (Conducted by External Examiner and Internal Examiner) and

40 marks shall be awarded based on the day-to-day performance and an Internal Test as Internal Evaluation.

Seminar:

There shall be two seminar presentations one in I semester and another in II semester. 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 a Committee consisting of Head of the Department, Supervisor and two other senior faculty members of the department. For each Seminar there will be only internal evaluation for 50 marks. A candidate has to secure a minimum of 50% of marks to be declared successful.

MOOCS Courses:

Every student has to register for a MOOCs course in 1st semester itself as approved by the Departmental Committee and complete it on self study basis and submit the certificate of successful completion before the end of 3rd semester.

Comprehensive Viva:

Every Student has to appear for a comprehensive Viva-Voce at the end of III Semester. The performance will be assessed by a committee for 50 marks.

5.1   Minimum Academic requirement:

i. A candidate shall be deemed to have secured the minimum academic requirement in a course if he secures a minimum of 40% of marks in the End semester Examination and a minimum aggregate of 50% of the total marks in the End Semester Examination and Internal Evaluation taken together.

ii. In case the candidate does not secure the minimum academic requirement in any course (as specified in 5.1(i)) he has to reappear for the End Semester Examination in that course.

iii. A candidate shall be given one chance to re-register for each course provided the internal marks secured by a candidate are less than 50% and has failed in the end examination. In such a case, the candidate must re-register for the course(s) and secure the required minimum attendance. The candidate's attendance in the re-registered course(s) shall be calculated separately to decide upon his eligibility for writing the end examination in those course(s). In the event of the student taking another chance, his internal marks and end examination marks obtained in the previous attempt stands cancelled.

iv. For re-registration the candidates have to apply to the Dean Academics by paying the

requisite fees and get approval from the College before the start of the Semester in which re-registration is required.

In case the candidate secures less than the required attendance in any re-registered course(s), he shall not be permitted to write the End Examination in that course. He shall again re-register the course when next offered.

6.0 EVALUATION OF PROJECT/DISSERTATION WORK:

The project duration is two semesters. Every candidate shall be required to submit a thesis or dissertation on a topic approved by the Project Review Committee.

  i. A Project Review Committee (PRC) shall be constituted with Head of the Department and two other senior faculty members along with project supervisor.

 ii. The total project work is evaluated at the end of 4th semester for a total of 100 marks out of which 50 marks are awarded by an internal committee (PRC) and 50 marks are awarded by an external examiner.

6.1   Registration of Project Work:

The work on the project shall be initiated at the beginning of the II year and the duration of the project is two semesters.

A candidate is permitted to register for the project work after satisfying the attendance requirement of all the courses, both theory and practical.

The student has to submit, in consultation with his project supervisor, the title, expected outcomes and plan of action of his project work for approval. The student can initiate the Project work, only after obtaining the approval from the Project Review Committee (PRC).

At a later stage if a candidate wishes to change his supervisor or topic of the project, he can do so with the approval of the Project Review Committee (PRC). However, the Project Review Committee (PRC) shall examine whether or not the change of topic/supervisor 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 Supervisor or topic as the case may be.

6.2   Project Evaluation:

 i. A candidate is permitted to submit Project Thesis only after successful completion of all theory and practical courses with the approval of PRC, not earlier than 40 weeks from the date of registration of the project work.

 ii. Three copies of the Project Thesis certified by the supervisor shall be submitted to the

department.

iii.   The thesis shall be adjudicated by an External Examiner approved by the Principal from a panel of 4 Examiners, eminent in the field, submitted by the Department.

iv.   If the report of the examiner is not favorable, the candidate shall revise and re-submit the Thesis in the time frame as decided by the PRC. If the report of the examiner is unfavorable again, the thesis shall be summarily rejected. The candidate has to re-register for the project and complete the project within the stipulated time after taking the approval from the competent authority.

v.   If the report of the examiner is favorable, Viva-Voce examination shall be conducted by the external examiner who adjudicated the thesis. The Head of the Department shall coordinate and make arrangements for the conduct of Viva-Voce examination.

vi.   The total project work is evaluated at the end of 4th semester for a total of 100 marks out of which 50 marks are awarded by the internal committee (PRC) and 50 marks are awarded by the external examiner and the performance is graded as per the grading system given in 7.0.

If the report of the Viva-Voce is unsatisfactory, the candidate shall retake the Viva-Voce examination only after three months. If he fails to get a satisfactory report at the second Viva-Voce examination, the candidate has to re-register for the project and complete the project within the stipulated time after taking the approval from the College.

7.0 GRADING SYSTEM:

Based on the students performance in different courses of a semester **letter grades** will be awarded at the end of the semester for each course. The letter grades and the corresponding **grade points** are as given in the following table.

Grade	Grade Points	% of marks
S	10	≥ 90
A	9	≥ 80 – < 90
B	8	≥ 70 – < 80
C	7	≥ 60 – < 70
D	6	≥ 50 – < 60
F	0 (Failed)	< 50

8.0 GRADE POINT AVERAGE:

Computation of SGPA and CGPA:

The following is the procedure to compute the Semester Grade Point Average (SGPA) for each semester and Cumulative Grade Point Average (CGPA) for all four semesters of the programme:

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

$$\textbf{SGPA} \ (Si) = \sum(Ci \ x \ Gi) / \sum Ci$$

where Ci is the number of credits of the ith course and Gi is the grade point scored by the student in the ith course.

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

$$\textbf{CGPA} = \sum(Ci \ x \ Si) / \sum Ci$$

Where Si is the SGPA of the ith semester and Ci is the total number of credits in that semester.

The SGPA and CGPA shall be rounded off to 2 decimal places and reported in the transcripts.

Illustration for Computation of SGPA and CGPA:

Computation of SGPA at the end of 1st semester

Illustration No.1:

Course	Credit	Grade letter	Grade point	Credit Point (Credit x Grade)
Course 1	3	A	9	3 x 9 = 27
Course 2	3	C	7	3 x 7 = 21
Course 3	3	B	8	3 x 8 = 24
Course 4	3	S	10	3 x 10 = 30
Course 5	3	D	6	3 x 6 = 18
Course 6	3	C	7	3 x 7 = 21
Course 7	2	A	9	2 x 9 = 18
Total	**20**			**159**

Thus, **SGPA at the end of 1st Semester= 159/20=7.95**

Illustration No.2 (with one failure)

Course	Credit	Grade letter	Grade point	Credit Point (Credit x Grade)
Course 1	3	A	9	3 x 9 = 27
Course 2	3	C	7	3 x 7 = 21
Course 3	3	B	8	3 x 8 = 24
Course 4	3	S	10	3 x 10 = 30
Course 5	3	F	0	3 x 0 = 00
Course 6	3	C	7	3 x 7 = 21
Course 7	2	A	9	2 x 9 = 18
Total	**20**			**141**

Thus, **SGPA at the end of 1st Semester= 141/20=7.05**

Illustration No.2 (a)

Course	Credit	Grade letter	Grade point	Credit Point (Credit x Grade)
Course 5	3	D	6	3 x 6 =18
Total Credits of the Semester	**20**			Ci(First Attempt)141 +Ci (subsequent attempt) 18= **159**

Thus, **SGPA=159/20=7.95**

Illustration No.3

Second Semester performance:

Course	Credit	Grade letter	Grade point	Credit Point (Credit x Grade)
Course 1	3	A	9	3 x 9 = 27
Course 2	3	C	7	3 x 7 = 21
Course 3	3	B	8	3 x 8 = 24
Course 4	3	Ex	10	3 x 10 =30
Course 5	3	A	9	3 x 9 = 27
Course 6	3	C	7	3 x 7 =21
Course 7	2	A	9	2 x 9 =18
Total	**20**			**168**

Thus, **SGPA of 2nd Semester = 168/20=8.4**

CGPA at the end of 2nd Semester: CGPA= $\frac{20*7.95+20*8.4}{40}$ = 8.175

Sem-1	*Sem-2*	*Sem-3*	*Sem-4*
Credit : 20	Credit: 20	Credit : 10	Credit : 20
SGPA: 7	SGPA: 8.5	SGPA: 9.2	SGPA: 6.86

CGPA after Final Semester:

Thus, CGPA$= \frac{20*7+20*8.5+10*9.2+20*6.86}{70} = \mathbf{7.70}$

AWARD OF CLASS:

A candidate who becomes eligible for the award of M.Tech degree shall be placed in one of the following classes based on CGPA.

TABLE: CGPA Required for Award of Class

Distinction	≥ 7.75*
First Class	≥ 6.75
Second Class	≥ 6.0

*In addition to the required CGPA of 7.75, the student must have necessarily passed all the courses of each semester in the first attempt.

9.0 MALPRACTICES:

The Principal shall refer the cases of malpractices in Continuous Internal Evaluation (CIE) and Semester End Examination (SEE) to an Enquiry Committee constituted by him. The committee will submit a report on the malpractice allegedly committed by the student to the Principal.

Rules pertaining to the punishments in the case of Malpractice are given in Annex-I

10.0 ADDITIONAL ACADEMIC REGULATIONS:

Grade Sheet: A grade sheet (memorandum) will be issued to each student indicating his performance in all courses taken in that semester and also indicating the grades and SGPA.

Transcripts: After successful completion of the total programme of study, a Transcript containing performance of all academic years will be issued as a final record. Candidates shall be permitted to apply for recounting/revaluation within the stipulated period with payment of prescribed fee. The Academic Council has to approve and recommend to the JNTUK, Kakinada for the award of a degree to any student.

11.0 WITHHOLDING OF RESULTS

If the student has not paid the dues, if any, to the **college** or if any case of indiscipline is pending against him, the result of the student will be withheld. His degree will be withheld in such cases.

12.0 TRANSITORY REGULATIONS:

For students admitted under special cases (mentioned in 1.1) these transitory regulations will provide the modus operandi.

At the time of such admission, based on the programme pursued (case by case):

5. Equivalent courses completed by the student are established by the BOS concerned.

6. Marks/Credits are transferred for all such equivalent courses and treated as successfully cleared in the Programme of study prescribed by SVEC.

7. A Programme chart of residual courses not cleared will be derived and a Programme of study with duration specified will be prescribed for pursuit at SVEC.

8. Marks obtained in the previous system if the case be, are converted to grades and CGPA is calculated accordingly.

All other modalities and regulations governing shall be the same as those applicable to the stream of students with whom such a candidate is included into.

Regarding the students who were admitted under JNTU, Kakinada regulations for affiliated colleges:

If they happen to join and study along with their juniors at SVEC, the transitory regulations to be specified by JNTU, Kakinada for such students have to be followed.

13.0 GENERAL:

i. Wherever the words "he", "him", "his", occur in the regulations, they include "she", "her", "hers".

ii. The academic regulation should be read as a whole for the purpose of any interpretation.

iii. In the case of any doubt or ambiguity in the interpretation of the above rules, the decision of the Chairman of the Academic Council is final.

iv. The College may change or amend the academic regulations or syllabi at any time and the changes or amendments made shall be applicable to all the students with effect from the dates notified by the college.

Annexure-I

MALPRACTICES

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	Expulsion from the examination hall and cancellation of the performance in that subject only.

	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)	
(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, palm computers or any other form of material relevant to the subject of the examination (theory or practical) in which the candidate is appearing.	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 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 University.
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 practicals 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 University 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 University 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 the subject.
6.	Refuses to obey the orders of the Chief Superintendent/Assistant – Superintendent / 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 officer-in charge 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 officer-in-charge, 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 University 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 University for further action to award suitable punishment	

COURSE STRUCTURE OF M.TECH (STRUCTURAL ENGINEERING)

I SEMESTER

S.No	Code	Subject	L	T	P	C
1	V18MAT05	Advanced Mathematics	3	0	0	3
2	V18SET01	Theory of elasticity	3	0	0	3
3	V18SET02	Matrix analysis of structures	3	0	0	3
4	V18SET03	Structural dynamics	3	0	0	3
5	V18SET04 V18SET05 V18SET06	**Elective-I** Pre-stressed concrete Sub-structure design Structural optimization	3	0	0	3
6	V18SET07 V18SET08 V18SET09	**Elective-II** Repair and rehabilitation of structures Analysis and design of tall buildings Plastic analysis and design	3	0	0	3
7	V18SEL01	Advanced structural Engineering laboratory	0	0	4	2
8	V18SET41	Seminar-I	0	2	0	2
Total Contact Hours: 24			Total Credits: 22			

II SEMESTER

S.No	Code	Subject	L	T	P	C
1	V18SET10	Finite element method	3	0	0	3
2	V18SET11	Earth quake resistant design	3	0	0	3
3	V18SET12	Stability of structures	3	0	0	3
4	V18SET13	Theory of plates and shells	3	0	0	3
5	V18SET14 V18SET15 V18SET16	**Elective-III** Experimental stress analysis Reliability analysis and design Advanced concrete technology	3	0	0	3
6	V18SET17 V18SET18 V18SET19	**Elective-IV** Industrial structures Bridge Engineering Earth retaining structures	3	0	0	3
7	V18SEL02	CAD Laboratory	0	0	4	2
8	V18SET42	Seminar-II	0	2	0	2
Total Contact Hours: 24			Total Credits: 22			

III SEMESTER

S.No	Code	Subject	L	T	P	C
1.	V18SET43	MOOCs Course	0	0	0	MNC
2	V18SET44	Comprehensive Viva-Voce	0	0	0	2
3	V18SEL05	Project	0	0	0	0
Total Credits: 2						

MNC-Mandatory Non-credit

IV SEMESTER

S.No	Code	Subject	L	T	P	C
1	V18SEL05	Project Work (Continued)	0	0	0	24
Total Credits: 24						

COURSE STRUCTURE OF M.TECH (POWER SYSTEM CONTROLL & AUTOMATION)

I SEMESTER

S.No.	Course Code	Course Title	L	T	P	Credits
1	V18PST01	Power System Operation & Control	3	-	-	3
2	V18PST02	Advanced Computer Methods in Power Systems	3	-	-	3
3	V18PST03	Advanced Power System Protection	3	-	-	3
4	V18PST04	Micro Controllers and Application	3	-	-	3
5	V18PST05 V18PST06 V18PST07 V18PST08	Elective – I: 1. Power System Reliability 2. Application of AI Techniques in Power Systems 3. Electrical Distribution Systems 4. Power System Security	3	-	-	3
6	V18PST09 V18PST10 V18PST11 V18PST12	Elective – II: 1. Reactive Power Compensation & Management 2. Power Quality 3. Power System Transients 4. Voltage Stability	3	-	-	3
7	V18PSL01	Power Systems Lab-I	-	-	4	2
8	V18PST41	Seminar-I	-	2	-	2
	Total Contact Hours: 24			Total Credits: 22		

II SEMESTER

S.No.	Course Code	Course Title	L	T	P	Credits
1	V18PST13	Modern Control Theory	3	-	-	3
2	V18PST14	Power System Dynamics & Stability	3	-	-	3
3	V18PST15	Solar & Wind Energy	3	-	-	3
4	V18PST16	Real Time Control of Power Systems	3	-	-	3
5	V18PST17 V18PST18 V18PST19 V18PST20	Elective – III: 1. Electrical and Hybrid Vehicles 2. Power System Deregulation 3. Smart Grid 4. High Voltage Engineering	3	-	-	3
6	V18PST21 V18PST22 V18PST23 V18PST24	Elective – IV: 1. Custom Power Devices 2. EHVAC Transmission 3. Demand Side Energy Management 4. HVDC & FACTS	3	-	-	3
7	V18PSL02	Power Systems Lab-II	-	-	4	2
8	V18PST42	Seminar-II	-	2	-	2
	Total Contact Hours: 24			Total Credits: 22		

MNC- Mandatory Non-Credit

III SEMESTER

S.No.	Course Code	Course Title	L	T	P	Credits
1	V18PST43	MOOCs	-	-	-	MNC
2	V18PST44	Comprehensive Viva-Voce	-	-	-	2
3	V18PSL05	Project Work	-	-	-	
		Total Credits: 2				

IV SEMESTER

S.No.	Course Code	Course Title	L	T	P	Credits
1	V18PSL05	Project Work Part (Continued)	-	-	-	24
		Total Credits: 24				

COURSE STRUCTURE OF M.TECH (MACHINE DESIGN)

I SEMESTER

S.No.	Course Code	Course	L	T	P	C
1	VI8MAT06	Computational Methods in Engineering	3	-	-	3
2	VI8MDT01	Advanced Mechanics of Solids	3	-	-	3
3	VI8MDT02	Advanced Mechanisms	3	-	-	3
4	VI8MDT03	Mechanical Vibrations	3	-	-	3
5	**Elective – I**	VI8MDT04 Design of Automobile Systems VI8MDT05 Product Design VI8MDT06 Geometric Modeling VI8MDT07 Non Destructive Evaluation	3	-	-	3
6	**Elective – II**	VI8MDT08 Fracture Mechanics VI8MDT09 Gear Engineering VI8MDT10 Design for Manufacturing & Assembly VI8MDT11 Continuum Mechanics	3	-	-	3
7	VI8MDL01	Machine Dynamics Lab	-	-	4	2
8	VI8MDT41	Seminar – I	-	2	-	2
	Total Contact Hours: 24		Total Credits: 22			

II SEMESTER

S.No.	Course Code	Course	L	T	P	C
1	VI8MDT12	Optimization and Reliability	3	-	-	3
2	VI8MDT13	Theory of Plasticity	3	-	-	3
3	VI8MDT14	Finite Element Method	3	-	-	3
4	VI8MDT15	Design with advanced Materials	3	-	-	3
5	**Elective – III**	VI8MDT16 Tribology VI8MDT17 Signal Analysis and Condition Monitoring VI8MDT18 Computational Fluid Dynamics VI8MDT19 Design Synthesis	3	-	-	3
6	**Elective-IV**	VI8MDT20 Pressure Vessel Design VI8MDT21 Mechanics of Composite Materials VI8MDT22 Mechatronics VI8MDT23 Experimental Stress Analysis	3	-	-	3
7	VI8MDL02	Design Practice Lab	-	-	4	2
8	VI8MDT42	Seminar – II	-	2	-	2
	Total Contact Hours: 24		Total Credits: 22			

III SEMESTER

S.No.	Course Code	Course	L	T	P	C
1	V18MDT43	MOOCs Course	-	-	-	MNC
1	VI8MDT44	Comprehensive Viva-Voce	-	-	-	2
2	VI8MDL05	Project Work	-	-	-	-
		Total Credits: 2				

MNC- Mandatory Non-credit

IV SMESTER

S.No.	Course Code	Course	L	T	P	C
1	VI8MDL05	Project Work (Continued)	-	-	-	24
		Total Credits: 24				

COURSE STRUCTURE OF M.TECH (VLSI & EMBEDED SYSTEM)

I SEMESTER

S. No.	Course Code	Course Name	L	T	P	C
1.	V18VLT01	Digital System Design	3	-	-	3
2.	V18VLT02	VLSI Technology And Design	3	-	-	3
3.	V18VLT03	CMOS Analog IC Design	3	-	-	3
4.	V18VLT04	Embedded Systems Design-I	3	-	-	3
5.	V18VLT05 V18VLT06 V18VLT07 V18VLT08	**ELECTIVE-1** Embedded C Digital Signal Processors &Architectures System On Chip Soft Computing Techniques	3	-	-	3
6.	V18VLT09 V18VLT10 V18VLT11 V18VLT12	**ELECTIVE -2** Digital Design Through HDL CPLD & FPGA Architecures And Applications Algorithms For VLSI Design –Automation VLSI Signal Processing	3	-	-	3
7.	V18VLL01	VLSI LAB	-	-	4	2
8.	V18VLT41	SEMINAR-I		2	-	2
		Total Contact Hours: 24		Total Credits: 22		

II SEMESTER

S. No.	Course Code	Course Name	L	T	P	C
1.	V18VLT13	Design For Testability	3	-	-	3
2.	V18VLT14	CMOS Digital IC Design	3	-	-	3
3.	V18VLT15	Embedded System Design - II	3	-	-	3
4.	V18VLT16	Embedded Real Time Systems	3	-	-	3
5.	V18VLT17 V18VLT18 V18VLT19 V18VLT20	**ELECTIVE-III** Low Power VLSI CMOS Mixed Signal Circuit Design System Verilog Semiconductor Memory Design And Testing	3	-	-	3
6.	V18VLT21 V18VLT22 V18VLT23 V18VLT24	**ELECTIVE-IV** Hardware Software Co-Design Embedded Computing Design For Internet Of Things Software for Embedded Systems.	3	-	-	3
7.	V18VLL02	Embedded System Design Lab	-	-	4	2
8.	V18VLT42	SEMINAR-II		2	-	2
		Total Contact Hours: 24		Total Credits: 22		

III SEMESTER

S.No	Course Code	Course Name	L	P	C
1	V18VLT43	MOOCs	-	-	MNC
2	V18VLT44	Comprehensive VIVA	-	-	2
3	V18VLL05	Project work	-	-	-
		Total Credits: 2			

MNC- Mandatory Non-Credit

IV SEMESTER

S.No	Course Code	Course Name	L	P	C
1	V18VLL05	Project work (Continued)	-	-	24
		Total Credits: 24			

COURSE STRUCTURE OF M.TECH (COMPUTER SCIENCE AND ENGINEERING)

I SEMESTER

S.No.	Course Code	Course	L	T	P	C
1	V18CTT01	Object Oriented Software Engineering	3	-	-	3
2	V18CTT02	NOSQL Database	3	-	-	3
3	V18CTT03	Advanced Computer Architecture	3	-	-	3
4	V18CTT04	Advanced Operating Systems	3	-	-	3
5	V18CTT05	Advanced Data Structures and Algorithm Analysis	3	-	-	3
6	V18CTT06	Machine Leaning	3	-	-	3
7	V18CTL01	NOSQL Database Lab	-	-	2	1
8	V18CTL02	Advanced Data Structures and Algorithm Analysis Lab	-	-	2	1
9	V18CTT41	Seminar-I	-	2	-	2
Total Contact Hours: 24			Total Credits: 22			

Total Contact Hours=24

II SEMESTER

S.No.	Course Code	Course	L	T	P	C
1	V18CTT07	Data Science	3	-	-	3
2	V18CTT08	Advanced Web Technologies	3	-	-	3
3	V18CTT09	Cloud Computing	3	-	-	3
4	V18CTT10	Internet of Things	3	-	-	3
	Elective-I					
5	V18CTT11	1) Cyber Security	3	-	-	3
	V18CTT12	2) Artificial Intelligence				
	V18CTT13	3) Bioinformatics				
	V18CTT14	4) Wireless Sensor Networks				
	Elective-II					
6	V18CTT15	1) Image Processing	3	-	-	3
	V18CTT16	2) Parallel Algorithms				
	V18CTT17	3) Mobile Computing				
	V18CTT18	4) Grid Computing				
7	V18CTL03	Data Science Lab	-	-	2	1
8	V18CTL04	Advanced Web Technologies Lab	-	-	2	1
9	V18CTT42	Seminar-II	-	2	-	2
Total Contact Hours: 24			Total Credits: 22			

Total Contact Hours=24

III SEMESTER

S.No.	Course Code	Course	L	T	P	C
1	V18CTT43	MOOCs Course	-	-	-	MNC
2	V18CTT44	Comprehensive Viva Voce	-	-	-	2
3	V18CTL05	Project Work	-	-	-	-
Total Credits: 2						

MNC- Mandatory Non-Credit

IV SEMESTER

S.No.	Course Code	Course	L	T	P	C
1	V18CTL05	Project Work (Continued)	-	-	-	24
Total Credits: 24						