

**ACADEMIC REGULATIONS
COURSE STRUCTURE
AND
DETAILED SYLLABUS**

MECHANICAL ENGINEERING

For

B.TECH FOUR YEAR DEGREE COURSE

(Applicable for the batches admitted from 2020-2021)



**MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT**

(AN AUTONOMOUS INSTITUTION)

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)

Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section 2(f) & 12(B) of the UGC act, 1956



Established: 2009

EAMCET Code: MLRS

Academic Regulations, Course Structure and Detailed Syllabus under Autonomous Status

Bachelor of Technology (B.Tech)

B.Tech - Regular Four Year Degree Programme

(For admitted batches from the academic year 2020 - 2021)

&

B.Tech - Lateral Entry Scheme

(For admitted batches from the academic year 2021 - 2022)

MLRS – R20 Regulations

Applicable for admitted batches from A.Y 2020-2021



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www.mlritm.ac.in

e-mail: principal@mlritm.ac.in

PRELIMINARY DEFINITIONS AND NOMENCLATURES

AICTE: Means All India Council for Technical Education, New Delhi.

Autonomous Institute: Means an institute designated as Autonomous by University Grants Commission (UGC), New Delhi in concurrence with affiliating University (Jawaharlal Nehru Technological University, Hyderabad) and State Government.

Academic Autonomy: Means freedom to an institute in all aspects of conducting its academic Programmes, granted by UGC for Promoting Excellence.

Academic Council: The Academic Council is the highest academic body of the institute and is responsible for the maintenance of standards of instruction, education and examination within the institute. Academic Council is an authority as per UGC regulations and it has the right to take decisions on all academic matters including academic research.

Academic Year: It is the period necessary to complete an actual course of study within a year. It comprises two main semesters i.e., (one odd + one even) and one supplementary semester.

Branch: Means specialization in a Programme like B.Tech degree Programme in Aeronautical Engineering, B.Tech degree Programme in Computer Science and Engineering etc.

Board of Studies (BOS): BOS is an authority as defined in UGC regulations, constituted by Head of the Organization for each of the departments separately. They are responsible for curriculum design and updation in respect of all the Programmes offered by a department.

Backlog Course: A course is considered to be a backlog course, if the student has obtained a failure grade (F) in that course.

Basic Sciences: The courses offered in the areas of Mathematics, Physics, Chemistry etc., are considered to be foundational in nature.

Commission: Means University Grants Commission (UGC), New Delhi.

Choice Based Credit System: The credit based semester system is one which provides flexibility in designing curriculum and assigning credits based on the course content and hours of teaching along with provision of choice for the student in the course selection.

Certificate Course: It is a course that makes a student to have hands-on expertise and skills required for holistic development in a specific area/field.

Compulsory course: Course required to be undertaken for the award of the degree as per the Programme.

Continuous Internal Examination: It is an examination conducted towards sessional assessment.

Core: The courses that are essential constituents of each engineering discipline are categorized as professional core courses for that discipline.

Course: A course is a subject offered by a department for learning in a particular semester.

Course Outcomes: The essential skills that need to be acquired by every student through a course.

Credit: A credit is a unit that gives weight to the value, level or time requirements of an academic course. The number of 'Contact Hours' in a week of a particular course determines its credit value. One credit is equivalent to one lecture/tutorial hour per week.

Credit point: It is the product of grade point and number of credits for a course.

Cumulative Grade Point Average (CGPA): It is a measure of cumulative performance of a student over all the completed semesters. The CGPA is the ratio of total credit points secured by a student in various courses in all semesters and the sum of the total credits of all courses in all the semesters. It is expressed up to two decimal places.

Curriculum: Curriculum incorporates the planned interaction of students with instructional content, materials, resources, and processes for evaluating the attainment of Programme Educational Objectives.

Department: An academic entity that conducts relevant curricular and co-curricular activities, involving both teaching and non-teaching staff, and other resources in the process of study for a degree.

Dropping from Semester: Student who doesn't want to register for any semester can apply in writing in prescribed format before the commencement of that semester.

Elective Course: A course that can be chosen from a set of courses. An elective can be Professional Elective and / or Open Elective.

Evaluation: Evaluation is the process of judging the academic performance of the student in her/his courses. It is done through a combination of continuous internal assessment and semester end examinations.

Grade: It is an index of the performance of the students in a said course. Grades are indicated by alphabets.

Grade Point: It is a numerical weight allotted to each letter grade on a 10 - point scale.

Honors: An Honors degree typically refers to a higher level of academic achievement at an undergraduate level.

Institute: Means Marri Laxman Reddy Institute of Technology and management, Hyderabad unless indicated otherwise by the context.

Massive Open Online Courses (MOOC): MOOC courses inculcate the habit of self-learning. MOOC courses would be additional choices in all the elective group courses.

Minor: Minor are coherent sequences of courses which may be taken in addition to the courses required for the B.Tech degree.

Pre-requisite: A specific course or subject, the knowledge of which is required to complete before student register another course at the next grade level.

Professional Elective: It indicates a course that is discipline centric. An appropriate choice of minimum number of such electives as specified in the Programme will lead to a degree with specialization.

Programme: Means, UG degree Programme: Bachelor of Technology (B.Tech); PG degree Programme: Master of Technology (M. Tech) / Master of Business Administration (MBA).

Programme Educational Objectives: The broad career, professional and personal goals that every student will achieve through a strategic and sequential action plan.

Project work: It is a design or research based work to be taken up by a student during his/her final year to achieve a particular aim. It is a credit based course and is to be planned carefully by the student.

Re-Appearing: A student can reappear only in the semester end examination for theory component of a course, subject to the regulations contained herein.

Registration: Process of enrolling into a set of courses in a semester of a Programme.

Regulations: The regulations, common to all B.Tech Programmes offered by Institute, are designated as — MLRS Regulations – R20 and are binding on all the stakeholders.

Semester: It is a period of study consisting of 15 to 18 weeks of academic work equivalent to normally 90 working days. Odd semester commences usually in July and even semester in December of every year.

Semester End Examinations: It is an examination conducted for all courses offered in a semester at the end of the semester.

Student Outcomes: The essential skill sets that need to be acquired by every student during her/his Programme of study. These skill sets are in the areas of employability, entrepreneurial, social and behavioral.

University: Means Jawaharlal Nehru Technological University Hyderabad (JNTUH), Hyderabad, is an affiliating University.

Withdraw from a Course: Withdrawing from a course means that a student can drop from a course within the first two weeks of odd or even semester (deadlines are different for summer sessions). However, he / she can choose a substitute course in place of it, by exercising the option within 5 working days from the date of withdrawal.

FOREWORD

The autonomy is conferred to Marri Laxman Reddy Institute of Technology and management (MLRITM), Hyderabad by University Grants Commission (UGC), New Delhi based on its performance as well as future commitment and competency to impart quality education. It is a mark of its ability to function independently in accordance with the set norms of the monitoring bodies including J N T University Hyderabad (JNTUH), Hyderabad and AICTE, New Delhi. It reflects the confidence of the affiliating University in the autonomous institution to uphold and maintain standards it expects to deliver on its own behalf. Thus, an autonomous institution is given the freedom to have its own **examination system** and **monitoring mechanism**, independent of the affiliating University but under its observance.

MLRITM is proud to win the credence of all the above bodies monitoring the quality in education and has gladly accepted the responsibility of sustaining, if not improving upon the standards and ethics for which it has been striving for more than a decade in reaching its present standing in the arena of contemporary technical education. As a follow up, statutory bodies such as Academic Council and Board of Studies (BOS) are constituted with the guidance of the Governing Body of the institute and recommendations of the JNTUH to frame the regulations, course structure, and syllabi under autonomous status.

The autonomous regulations, course structure, and syllabi have been prepared after prolonged and detailed interaction with several expertise solicited from academics, industry and research, in accordance with the vision and mission of the institute in order to produce a quality engineering graduate to the society.

All the faculty, parents, and students are requested to go through all the rules and regulations carefully. Any clarifications needed are to be sought at appropriate time and from the principal of the institute, without presumptions, to avoid unwanted subsequent inconveniences and embarrassments. The cooperation of all the stake holders is requested for the successful implementation of the autonomous system in the larger interests of the institute and brighter prospects of engineering graduates.

PRINCIPAL



MARRI LAXMAN REDDY INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(An Autonomous Institution)

ACADEMIC REGULATIONS FOR B.TECH. REGULAR STUDENTS
WITH EFFECT FROM ACADEMIC YEAR 2020 – 21 (MLRS- R20)

For pursuing four year under graduate Bachelor Degree Programme of study in Engineering (B.Tech) offered by Marri Laxman Reddy Institute of Technology and management under Autonomous status is here in referred to as MLRS (UGC Autonomous).

All the rules specified here in approved by the Academic Council will be in force and applicable to students admitted from the Academic Year 2020-21 onwards. Any reference to “Institute” or “College” in these rules and regulations shall stand for Marri Laxman Reddy Institute of Technology and Management (UGC Autonomous).

All the rules and regulations, specified hereafter shall be read as a whole for the purpose of interpretation as and when a doubt arises, the interpretation of the Chairman, Academic Council is final. As per the requirements of statutory bodies, the Principal, Marri Laxman Reddy Institute of Technology and management shall be the chairman Academic Council.

1. Under-Graduate Degree Programme in Engineering & Technology (UGP in E&T):

Marri Laxman Reddy Institute of Technology and Management offers a 4-year (8 semesters) **Bachelor of Technology (B.Tech.)** degree Programme, under Choice Based Credit System (CBCS) with effect from the academic year 2020-21.

2.0 Admission:

2.1 Admission first year of four-year B. Tech. degree Programme of study in Engineering:

2.1.1 Eligibility:

A candidate seeking admission into the first year of four year B. Tech. degree Programme should have:

1. Passed either Intermediate Public Examination (I.P.E) conducted by the Board of Intermediate Education, Telangana, with Mathematics, Physics and Chemistry as optional subjects or any equivalent examination recognized by Board of Intermediate Education, Telangana or a Diploma in Engineering in the relevant branch conducted by the Board of Technical Education, Telangana or equivalent Diploma recognized by Board of Technical

Education for admission as per guidelines defined by the Regulatory bodies of Telangana State Council for Higher Education (TSCHE) and AICTE.

2. Secured a rank in the EAMCET examination conducted by the Telangana State Government or on the university or in the basis of any other order of merit approved by the university, for allotment of a seat by the Convener, EAMCET.

2.1.2. Admission Procedure:

Admissions are made into the first year of four year B. Tech. Degree Programme as per the stipulations of the TSCHE.

- (a) Category A seats are filled by the Convener, TSEAMCET (70%).
- (b) Category B seats are filled by the Management (30%).

2.2 Admission into the second year of four year B. Tech. degree Programme in Engineering

2.2.1 Eligibility:

A candidate seeking admission under lateral entry into the II year I Semester B. Tech. degree Programme should have passed the qualifying exam (B.Sc. Mathematics or Diploma in concerned course) and based on the rank secured by the candidate in Engineering Common Entrance Test ECET (FDH) in accordance with the instructions received from the Convener, ECET and Government of Telangana allotted the seats.

2.2.2 Admission Procedure:

Admissions are made into the II year of four year B. Tech. degree Programme through Convener, ECET (FDH) against the sanctioned strength in each Programme of study as lateral entry students.

3.0 B. Tech. Programme Structure:

3.1 Programmes Offered:

Marri Laxman Reddy Institute of Technology and Management, an autonomous college affiliated to JNTUH, offers the following B. Tech. Programmes of study leading to the award of B. Tech. degree under the autonomous scheme.

1. B. Tech - Civil Engineering.
2. B. Tech - Computer Science and Engineering.
3. B. Tech - Computer Science and Engineering
(Artificial Intelligence & Machine Learning).
4. B. Tech - Computer Science and Engineering (Data Science).
5. B. Tech - Computer Science and Engineering (Cyber Security).
6. B. Tech - Computer Science and Information Technology.
7. B. Tech - Electronics and Communication Engineering.

8. B. Tech - Electrical and Electronics Engineering.
9. B. Tech - Information Technology.
10. B. Tech - Mechanical Engineering.

3.2 Duration of the Programmes:

A student after securing admission shall complete the B.Tech. Programme in a minimum period of **four** academic years (8 semesters), and a maximum period of **eight** academic years (16 semesters) starting from the date of commencement of first year first semester, failing which student shall forfeit seat in B.Tech course. Each student shall secure 160 credits (with CGPA \geq 5) required for the completion of the under graduate Programme and award of the B.Tech Degree.

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

3.3.1 Semester Scheme:

Each under graduate Programme is of 4 academic years (8 semesters) with the academic year divided into two semesters of 22 weeks (\geq 90 instructional days) each, each semester having -‘Continuous Internal Evaluation (CIE)’ and ‘Semester End Examination (SEE)’.

3.3.2 Credit Courses:

All subjects / courses are to be registered by the student in a semester to earn credits which shall be assigned to each subject / course in an L: T: P: C (lecture periods: tutorial periods: practical periods: credits) structure based on the following general pattern.

- One credit for one hour / week / semester for theory / lecture (L) courses or Tutorials.
- One credit for two hours / week / semester for laboratory / practical (P) courses.

Courses like Environmental Science, Constitution of India, Intellectual Property Rights, and Gender Sensitization lab are mandatory courses. These courses will not carry any credits.

3.3.3 Subject Course Classification:

All subjects / courses offered for the under graduate Programme in E&T (B. Tech. degree Programmes) are broadly classified as follows.

S. No.	Broad Course Classification	Course Group / Category	Course Description
1	Foundation Courses	BS – Basic Sciences	Includes mathematics, physics and chemistry subjects
2	(FnC)	ES -Engineering	Includes fundamental engineering subjects

		Sciences	
3		HS – Humanities and Social sciences	Includes subjects related to humanities, social sciences and management
4	Core Courses (CoC)	PC – Professional Core	Includes core subjects related to the parent Discipline / department / branch of Engineering.
5	Elective Courses (ElC)	PE – Professional Electives	Includes elective subjects related to the parent Discipline / department / branch of Engineering.
6	Open Elective Courses	OE – Open Electives	Elective subjects which include inter-disciplinary subjects or subjects in an area outside the parent discipline / department / branch of Engineering.
7		Major Project Work	B.Tech. project or UG project or UG major project or Project Stage I & II
8	Project Courses	Industrial training / Mini- project	Industrial training / Summer Internship / Industrial Oriented Mini-project / Mini-project
9	Skill Development	Seminar	Seminar / Colloquium based on core contents related to parent discipline / department / branch of Engineering.
10	Mandatory Courses(MC)	Mandatory Courses	Mandatory courses (non-credit)

4.0 Course Registration:

- 4.1 A faculty advisor or counsellor shall be assigned to a group of 20 students, who will advise the students about the under graduate Programme, its course structure and curriculum, choice / option for subjects / courses, based on their competence, progress, pre-requisites and interest.
- 4.2 The academic section of the college invites ‘registration forms’ from students before the beginning of the semester through ‘on-line registration’, ensuring ‘date and time of starting’. The on-line registration requests for any ‘current semester’ shall be **completed before the commencement of SEEs (Semester End Examinations) of the ‘preceding semester’**.

- 4.3** A student can apply for **on-line** registration, **only after** obtaining the **‘written approval’** from faculty advisor / counsellor, which should be submitted to the college academic section through the Head of the Department. A copy of it shall be retained with Head of the Department, faculty advisor / counsellor and the student.
- 4.4** If the student submits ambiguous choices or multiple options or erroneous entries during on-line registration for the subject(s) / course(s) under a given / specified course group / category as listed in the course structure, only the first mentioned subject / course in that category will be taken into consideration.
- 4.5** Subject / course options exercised through on-line registration are final and cannot be changed or inter-changed further and alternate choices also will not be considered. However, if the subject / course that has already been listed for registration by the Head of the Department in a semester could not be offered due to any unforeseen or unexpected reasons, then the student shall be allowed to have alternate choice either for a new subject (subject to offering of such a subject), or for another existing subject (subject to availability of seats). Such alternate arrangements will be made by the head of the department, with due notification and time-framed schedule, within the **first week** after the commencement of class-work for that semester.
- 4.6** Dropping of subjects / courses may be permitted, only after obtaining prior approval from the faculty advisor / counsellor ‘within a period of 15 days’ from the beginning of the current semester.
- 4.7 Open Elective Course:** Students can choose One Open Elective Course (OEC-I) during V Semester, one (OEC-II) during VI Semester and one (OEC-III) in VII Semester from the list of Open Elective Courses given. However, Students cannot opt for an Open Elective Courses offered by their own (parent) Department, if it is there in the already listed under any category of the Subjects offered by parent Department in any Semester.
- 4.8 Professional Electives:** The students have to choose six professional electives (PE-I to VI) from the list of professional electives given.
- 5.0 Subjects / Courses to be offered:**
- 5.1** A typical section (or class) strength for each semester shall be 60.
- 5.2** A subject / course may be offered to the students, **only if** a minimum of 20 students (1/3 of the section strength) opt for it. The maximum strength of a section is limited to 80 (60 + 1/3 of the section strength).

- 5.3** More than **one faculty member** may offer the **same subject** (lab / practical may be included with the corresponding theory subject in the same semester) in any semester. However, selection of choice for students will be based on - '**first come first serve** basis and CGPA criterion' (i.e. the first focus shall be on early **on-line entry** from the student for registration in that semester, and the second focus, if needed, will be on CGPA of the student).
- 5.4** If more entries for registration of a subject come into picture, then the Head of the Department concerned shall decide, whether or not to offer such a subject / course for **two (or more) sections**
- 5.5** In case of options coming from students of other departments / branches / disciplines (not considering open electives), first **priority** shall be given to the student of the '**Parent Department**'.

6.0 Attendance Requirements:

- 6.1** A student shall be eligible to appear for the semester end examinations, if the student acquires a minimum of 75% of attendance in aggregate of all the subjects / courses (excluding attendance in mandatory courses like Environmental Science, Constitution of India, Intellectual Property Rights, and Gender Sensitization lab) for that semester. Two periods of attendance for each theory subject shall be considered, if the student appears for the mid-term examination of that subject. **This attendance should also be included in the fortnightly upload of attendance to the University. The attendance of Mandatory Non-Credit courses should be uploaded separately to the University.**
- 6.2** Shortage of attendance in aggregate up to 10% (65% and above, and below 75%) in each semester may be condoned by the college academic committee on genuine and valid grounds, based on the students representation with supporting evidence.
- 6.3** A stipulated fee shall be payable for condoning of shortage of attendance.
- 6.4** Shortage of attendance below 65% in aggregate shall in **no** case be condoned.
- 6.5** **Students whose shortage of attendance is not condoned in any semester are not eligible to take their end examinations of that semester. They get detained and their registration for that semester shall stand cancelled.** They will not be promoted to the next semester. They may seek re-registration for all those subjects registered in that semester in which the student is detained, by seeking re-admission into that semester as and when offered; if there are any professional electives and / or open electives, the same may also be re-registered if offered. However, if those electives are not offered in later semesters, then alternate electives may be chosen from the **same** set of elective subjects offered under that category.

6.6 A student fulfilling the attendance requirement in the present semester shall not be eligible for readmission into the same class.

7.0 Academic Requirements:

The following academic requirements have to be satisfied, in addition to the attendance requirements mentioned in item no.6.

7.1 A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course, if student secures not less than 35% (24 marks out of 70 marks) in the semester end examination, and a minimum of 40% (40 marks out of 100 marks) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together; in terms of letter grades, this implies securing ‘C’ grade or above in that subject/course.

7.2 A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to Industrial Oriented Mini Project / Summer Internship and seminar, if the student secures not less than 40% marks (i.e. 40 out of 100 allotted marks) in each of them. The student is deemed to have failed, if he (i) does not submit a report on Industrial Oriented Mini Project / Summer Internship, or does not make a presentation of the same before the evaluation committee as per schedule, or (ii) does not present the seminar as required in the IV year I Semester, or (iii) secures less than 40% marks in Industrial Oriented Mini Project / Summer Internship and seminar evaluations.

A student may reappear once for each of the above evaluations, when they are scheduled again; if the student fails in such ‘one reappearance’ evaluation also, the student has to reappear for the same in the next subsequent semester, as and when it is scheduled.

7.3 Promotion Rules:

S. No.	Promotion Stage	Conditions to be fulfilled
1	First year first semester to first year second semester	Regular course of study of first year first semester.
2	First year second semester to second year first semester	(i) Regular course of study of first year second semester. (ii) Must have secured 50% credits up to first year second semester from all the relevant regular and supplementary examinations, whether the student takes those examinations or not.
3	Second year first semester to second year second semester	Regular course of study of second year first semester.

4	Second year second semester to third year first semester	(i) Regular course of study of second year second semester. (ii) Must have secured 60% credits up to second year second semester from all the relevant regular and supplementary examinations, whether the student takes those examinations or not.
5	Third year first semester to third year second semester	Regular course of study of third year first semester.
6	Third year second semester to fourth year first semester	(i) Regular course of study of third year second semester. (ii) Must have secured 60% credits up to third year second semester from all the relevant regular and supplementary examinations, whether the student takes those examinations or not.
7	Fourth year first semester to fourth year second semester	Regular course of study of fourth year first semester.

7.4 A student (i) shall register for all courses / subjects covering 160 credits as specified and listed in the course structure, (ii) fulfils all the attendance and academic requirements for 160 credits, (iii) earn all 160 credits by securing SGPA \geq 5.0 (in each semester) and CGPA (at the end of each successive semester) \geq 5.0 (iv) passes all **the mandatory courses**, to successfully complete the under graduate Programme. The performance of the student in these 160 credits shall be taken into account for the calculation of ‘the final CGPA (**at the end of under graduate Programme**) and shall be indicated in the grade card of IV year II semester.

7.5 If a student registers for ‘extra subjects’ (in the parent department or other departments / branches of Engg.) other than those listed subjects totalling to 160 credits as specified in the course structure of his department, the performances in those ‘**extra subjects**’ (although evaluated and graded using the same procedure as that of the required 160 credits) will not be taken into account while calculating the SGPA and CGPA. For such ‘**extra subjects**’ registered, percentage of marks and letter grade alone will be indicated in the grade card as a performance measure, subject to completion of the attendance and academic requirements as stated in regulations 6 and 7.1 – 7.4 above.

7.6 Honors degree in a discipline:

This concept is introduced in the curriculum for all conventional B. Tech. programmes. The main objective of Honors degree in a discipline is to provide additional learning opportunities for academically motivated students and it is an optional feature of the B. Tech. programme. In order to earn a Honors degree in his/her discipline, a student has to earn 18 extra credits by studying any six professional elective courses of the same discipline or equivalent MOOC available under SWAYAM-NPTEL platform, as decided by the Institute from time to time. The Evaluation pattern for theory courses (subjects) will be similar to the regular programme evaluation. Students aspiring for Honors degree must register from V semester onwards. However, Honors degree registrations are not allowed before V semester and after VI semester.

- a. A student registered for honors shall pass in all subjects that constitute the requirement for the honors degree programme. No class/division (i.e., second class, first class and distinction, etc.) shall be awarded of honors degree programme.
- b. On Successful accumulation of 18 credits at the end of the programme, this will be mentioned in the degree certificate as B.Tech (Hons.) XXX with specialization in YYY. For example, B.Tech (Hons.) **Computer Science and Engineering with specialization in Block Chain Technology** This fact will also be reflected in the transcripts, along with the list of courses taken for honors programme with CGPA mentioned separately.
- c. The above said points in honor degree are to be approved by Academic senate of the University.

7.7 Minor degree in a discipline (Minor degree/programme):

This concept is introduced in the curriculum of all conventional B. Tech. Programmes. The main objective of Minor in a discipline is to provide additional learning opportunities for academically motivated students and it is an optional feature of the B. Tech. programme. In order to earn a Minor in a discipline a student has to earn 18 extra credits by studying any six theory courses/subjects from the programme core & professional elective courses of the minor discipline or equivalent MOOC courses available under SWAYAM – NPTEL platform. The list of courses to be studied either in MOOCs or conventional type will be decided by the Institute at the time of registration for Minor degree.

- a. Students aspiring for a Minor must register from V semester onwards and must opt for a Minor in a discipline other than the discipline he/she is registered in. However, Minor discipline registrations are not allowed before V semester and after VI semester.

- b. Students will not be allowed to register and pursue more than two subjects (courses) in any semester.
- c. The Evaluation pattern of theory subjects will be similar to the regular programme evaluation.
- d. Students may enlist their choice of Minor discipline programmes, in order of preference, for which they wish to register. It will not be permissible to alter the choices after the application has been submitted. However, students are allowed to opt for only one Minor discipline programme in the order of preference given by them.
- e. Minimum strength required for offering a Minor in a discipline is considered as 20% of the class size and Maximum would be 80% of the class size.
- f. Completion of a Minor discipline programme requires no addition of time to the regular Four year Bachelors' programme. That is, Minor discipline programme should be completed by the end of final year B. Tech. program along with the major discipline.
- g. The Concerned Principal of the college shall arrange separate course/class work and time table of the various Minor programmes. Attendance regulations for these Minor discipline programmes will be as per regular courses.
- h. A student registered for Minor in a discipline shall pass in all subjects that constitute the requirement for the Minor degree programme. No class/division (i.e., second class, first class and distinction, etc.) shall be awarded for Minor degree programme.
- i. The Minor in a discipline will be mentioned in the degree certificate as Bachelor of Technology in XXX with Minor in YYY. For example, Bachelor of Technology in **Computer Science & Engineering** with Minor in **Electronics & Communication Engineering**. This fact will also be reflected in the transcripts, along with the list of courses taken for Minor programme with CGPA mentioned separately.
- j. The above said points in minor degree are to be approved by Academic senate of the University.

Institute shall adopt the following instruction while offering the Honors Degree:

S. No	Minor Degree /Hons.	To be offered as Hons., Only for following Major Disciplines (for any other major Disciplines which is not mentioned, it may be offered as Minor Degree)
1	Internet of Things	Electronics and Communication Engineering
2	Block Chain Technology	Computer Science and Engineering
3	Robotics	Mechanical Engineering
4	Infrastructural Engineering	Civil Engineering

7.8 A student eligible to appear in the semester end examination for any subject / course, but absent from it or failed (thereby failing to secure ‘C’ grade or above) may reappear for that subject / course in the supplementary examination as and when conducted. In such cases, internal marks (CIE) assessed earlier for that subject / course will be carried over, and added to the marks to be obtained in the SEE supplementary examination for evaluating performance in that subject.

7.9 A student **detained in a semester due to shortage of attendance may be re- admitted in the same semester in the next academic year for fulfilment of academic requirements.** The academic regulations under which a student has been readmitted shall be applicable. However, no grade allotments or SGPA / CGPA calculations will be done for the entire semester in which the student has been detained.

7.10 A student detained **due to lack of credits, shall be promoted to the next academic year only after acquiring the required academic credits.** The academic regulations under which the student has been readmitted shall be applicable to him/her.

8.0 Evaluation - Distribution and Weight age of marks:

8.1 The performance of a student in every subject / course (including practical’s and Project Stage – I &II) will be evaluated for 100 marks each, with 30 marks allotted for CIE (Continuous Internal Evaluation) and 70 marks for SEE (Semester End-Examination).

For all Theory Courses as mentioned above, the distribution shall be 30 marks for CIE, and 70 marks for the SEE.

8.2 For Theory Subjects:

Continuous Internal Evaluation (CIE):

1. During the Semester, there will be two mid-terms examinations for 30 marks each. Each mid-term examination consists of one subjective paper for 25 marks and assignment/ Technical Presentation/ Micro Projects for 5 marks for each subject.
2. Question paper contains two Parts (Part-A and Part-B.) The distribution of marks for PART-A and PART-B will be 10 marks & 15 marks respectively for UG Programmes.
3. Pattern of the question paper is as follows:

PART–A:

- Consists of Ten *Short answer Questions* each carrying one mark. The I-Mid-term examination shall be conducted for the 50 % of the syllabus and II-Mid-term examination shall be conducted for remaining 50 % of the syllabus.

PART-B:

- Consists of Three questions (out of which students have to answer three questions) carrying five marks each. Each question there will be an “either” “or” choice (that means there will be two questions from each unit and the student should answer any one question). The questions may consist of sub questions also.
- The first mid-term examination shall be conducted for the first 50% of the syllabus, and the second mid-term examination shall be conducted for the remaining 50% of the syllabus.
- First Assignment should be submitted before the commencement of the first mid-term examinations, and the Second Assignment should be submitted before the commencement of the second mid-term examinations. The assignments shall be specified/given by the concerned subject teacher.
- The total marks secured by the student in each mid-term examination are evaluated for 30 marks, and the average of the two mid - term examinations shall be taken as the final marks secured by each student in Continuous Internal Evaluation.
- If any student is absent for any subject of Mid-term examination, an online test (CBT - Computer Based Test) will be conducted for student by the institute.

Semester End Examination (SEE):

The Semester End Examination (SEE) will be conducted for 70 marks consisting of Two parts i). **Part - A** for 20 marks ii). Part - B for 50 marks.

- Part - A is compulsory question consisting of ten sub questions. Two sub questions from each unit and carry 2 marks each.
- Part - B consist of five questions (numbered from 2 to 6) carrying 10 marks each. Each of these questions is from one unit may contain sub questions. For each question there will be "either" or choice, which means that there will be two questions from each unit and the student, should answer either of the two questions.

8.3 For Practical Courses:

Continuous Internal Evaluation (CIE):

There shall be a Continuous Internal Evaluation (CIE) during the Semester for 30 marks with a distribution of 20 marks for day-to-day evaluation and 10 marks for internal lab exam. Two internal practical tests (each of 10 marks) shall be conducted by the concerned laboratory teacher and the average of the two tests is considered.

Semester End Examination (SEE):

SEE shall be conducted for 70 marks with an external examiner and the laboratory teacher concerned. The external examiner shall be appointed by the Chief Controller of Examinations of the college. The external examiner should be selected from the outside college among the autonomous / reputed institutions from a panel of three examiners submitted by the concerned BoS chairman of the Department.

8.4 Engineering Graphics:

- For the Subjects having Design and / or Drawing, (such as Engineering Graphics, Engineering Drawing, Machine Drawing, Production Drawing Practice, and Estimation), the distribution shall be 30 marks for CIE (20 marks for day-to-day work and timely submission of drawing sheets and 10 marks for internal tests). There shall be two internal tests in a semester and the average of the two shall be considered for the award of marks for CIE.
- The distribution of marks for SEE shall be 70 marks. The SEE shall consist of five questions carrying 14 marks each. Each of these questions is from one unit and may contain sub - questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.

8.5 Industry Oriented Mini Project / Summer Internship:

There shall be an Industry Oriented Mini Project / Summer Internship, in collaboration with an industry of their specialization. Students will register for this immediately after III year II semester (VI Semester) end examinations and pursue it during summer vacation. The evaluation of Mini project will be done at the end of IV Year I semester (VII semester). It shall be evaluated for 100 marks (30 marks Internal and 70 marks External). The committee consisting of Project Coordinator, Supervisor of the project and one senior faculty of the department will evaluate the mini Project and award appropriate Grade, based on the report submitted to the department and presentation provided by the student in front of the committee.

8.6 Major Project - It shall be carried out in two stages:

Project Stage – I shall be evaluated internally during IV Year I Semester, Project Stage – II shall be evaluated externally during IV Year II Semester. Each stage will be evaluated for 100 marks. Student has to submit project work report at the end of each semester. First report includes project work carried out in IV Year I semester and second report include project work carried out in IV Year I & II Semesters. SEE for both project stages shall be completed before the commencement of SEE Theory examinations.

- (a) **For Project Stage – I**, the departmental committee consisting of Head of the Department, project supervisor and a senior faculty member shall evaluate the project work for 70 marks and project supervisor shall evaluate for 30 marks. Two reviews shall be conducted. Review-I will be conducted within a month from the commencement of class work (problem definition, objective, literature survey) and Review-II will be conducted before second mid examination (brief description and sample case study, progress of work, presentation and report submission). Average of the two reviews will be taken for 100 marks.

The student is deemed to have failed, if he (i) does not submit a report on Project Stage - I or does not make a presentation of the same before the evaluation committee as per schedule, or (ii) secures less than 40% marks. A student who has failed may reappear once for the above evaluation, when it is scheduled again; if he fails in such 'one reappearance' evaluation also, he has to reappear for the same in the subsequent semesters, as and when it is scheduled. The topics for industrial oriented mini project, seminar and Project Stage – I shall be different from one another.

- (b) **Project Stage – II** is the continuation of Project Stage – I. It shall be evaluated by the external examiner for 70 marks and the project supervisor shall evaluate it for 30 marks. Two reviews should be conducted. Review-I will be conducted within a month from the commencement of class work (progress of work, discussion and presentation) and Review-II will be conducted before second mid examination (progress of work, results, discussion, presentation and report submission). Average of the two reviews will be taken for CIE. The Project Viva-voce (SEE) shall be conducted by a committee comprising of an External Examiner, Head of the Department and Project Supervisor. In SEE marks, 20% for working model / simulation / data collection, 20% for report preparation and 60% for presentation and viva-voce. The external examiner should be selected by Chief Controller of Examinations / Principal from outside the college among the autonomous / reputed institutions from a panel of three examiners submitted by the concerned Head of the Department.

The student is deemed to have failed, if he (i) does not submit a report on Project Stage - II, or does not make a presentation of the same before the external examiner as per schedule, or (ii) secures less than 40% marks in the sum total of the CIE and SEE taken together. A student who has failed may reappear once for the above evaluation, when it is scheduled again; if student fails in such 'one reappearance' evaluation also, he has to reappear for the same in the next subsequent semester, as and when it is scheduled.

8.7 Technical Seminar:

For Seminar presentation, the student shall collect the information on a specialized topic, prepare a Technical Report and submit to the department at the time of seminar presentation. The seminar presentation (along with the technical report) shall be evaluated by a committee consisting of Seminar coordinator and two senior faculty members with appropriate grade. The seminar report shall be evaluated internally for 100 marks. There shall be no semester end examination for the seminar.

8.8 Mandatory Non-Credit Courses:

Mandatory Non-Credit Courses offered in any semester, a ‘Satisfactory / Not Satisfactory’ shall be awarded to the student based on the performance in both CIE and SEE.

9.0 Award of Grades:

9.1 Grades will be awarded to indicate the performance of students in each theory subject, laboratory / practicals, seminar, Industry Oriented Mini Project, and project Stage - I & II. Based on the percentage of marks obtained (Continuous Internal Evaluation plus Semester End Examination, both taken together) as specified in item 8 above, a corresponding letter grade shall be given.

9.2 As a measure of the performance of a student, a 10-point absolute grading system using the following letter grades (as per UGC / AICTE guidelines) and corresponding percentage of marks shall be followed:

% of Marks Secured in a Subject/Course (Class Intervals)	Letter Grade (UGC Guidelines)	Grade Points
Greater than or equal to 90%	O (Outstanding)	10
80 and less than 90%	A ⁺ (Excellent)	9
70 and less than 80%	A (Very Good)	8
60 and less than 70%	B ⁺ (Good)	7
50 and less than 60%	B (Average)	6
40 and less than 50%	C (Pass)	5
Below 40%	F (FAIL)	0
Absent	Ab	0

9.3 A student who has obtained an ‘F’ grade in any subject shall be deemed to have ‘**failed**’ and is required to reappear as a ‘supplementary student’ in the semester end examination, as and when offered. In such cases, internal marks in those subjects will remain the same as those obtained earlier.

9.4 To a student who has not appeared for an examination in any subject, ‘**AB**’ grade will be

allocated in that subject, and he is deemed to have **‘failed’**. A student will be required to reappear as a ‘supplementary student’ in the semester end examination, as and when offered next. In this case also, the internal marks in those subjects will remain the same as those obtained earlier.

9.5 A letter grade does not indicate any specific percentage of marks secured by the student, but it indicates only the range of percentage of marks.

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

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

9.7 A student passes the subject / course only when $GP \geq 5$ (‘C’ grade or above)

9.8 The Semester Grade Point Average (SGPA) is calculated by dividing the sum of credit points ($\sum CP$) secured from all subjects / courses registered in a semester, by the total number of credits registered during that semester. SGPA is rounded off to two decimal places. SGPA is thus computed as

$$SGPA = \{\sum_{i=1}^N CiGi\} / \{\sum_{i=1}^N Ci\}..... \text{For each semester,}$$

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

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

$$CGPA = \{\sum_{j=1}^M CiGi\} / \{\sum_{j=1}^M Ci\}.....\text{For all S semesters registered,}$$

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

where ‘M’ is the total no. of subjects (as specifically required and listed under the course structure of the parent department) the student has ‘registered’ i.e., from the 1st semester onwards up to and inclusive of the 8th semester, ‘j’ is the subject indicator index (takes into account all subjects from 1 to 8 semesters), C_j is the no. of credits allotted to the j^{th} subject, and G_j represents the grade points (GP) corresponding to the letter grade awarded for that j^{th}

subject. After registration and completion of I year I semester, the SGPA of that semester itself may be taken as the CGPA, as there are no cumulative effects.

Illustration of calculation of SGPA:

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

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

Illustration of calculation of CGPA up to 3rd semester:

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

III	Course 17	4	O	10	40
III	Course 18	3	B+	7	21
III	Course 19	4	B	6	24
III	Course 20	4	A	8	32
III	Course 21	3	B+	7	21
	Total Credits	69		Total Credit Points	518

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

The above illustrated calculation process of CGPA will be followed for each subsequent semester until 8th semester. The CGPA obtained at the end of 8th semester will be the final CGPA secured for entire B. Tech. Programme for the student.

9.10 For merit ranking or comparison purposes or any other listing, only the ‘**rounded off**’ values of the CGPA’s will be used.

9.11 SGPA and CGPA of a semester will be mentioned in the semester Memorandum of Grades if all subjects of that semester are passed in first attempt. Otherwise the SGPA and CGPA shall be mentioned only on the Memorandum of Grades in which sitting he passed his last exam in that semester. However, mandatory courses will not be taken into consideration.

10.0 Passing standards:

10.1 A student shall be declared successful or ‘passed’ in a semester, if he secures a GP ≥ 5 (‘C’ grade or above) in every subject / course in that semester (i.e. when the student gets an SGPA ≥ 5.00 at the end of that particular semester); and he shall be declared successful or ‘passed’ in the entire under graduate Programme, only when gets a CGPA ≥ 5.00 for the award of the degree as required.

10.2 After the completion of each semester, a grade card or grade sheet shall be issued to all the registered students of that semester, indicating the letter grades and credits earned. It will show the details of the courses registered (course code, title, no. of credits, grade earned, etc.), credits earned.

11.0 Declaration of results:

11.1 Computation of SGPA and CGPA are done using the procedure listed in 9.6 to 9.9.

11.2 For final percentage of marks equivalent to the computed final CGPA, the following formula may be used.

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

12.0 Award of degree:

12.1 A student who registers for all the specified subjects / courses as listed in the course structure and secures the required number of 160 credits (with CGPA \geq 5.0), within 8 academic years from the date of commencement of the first academic year, shall be declared to have **“QUALIFIED”** for the award of B.Tech. Degree in the chosen branch of Engineering selected at the time of admission.

12.2 A student who qualifies for the award of the degree as listed in item 12.1 shall be placed in the following classes.

12.3 A student with final CGPA (at the end of the under graduate Programme) \geq 7.50, and fulfilling the following conditions - shall be placed in **“FIRST CLASS WITH DISTINCTION”**.

However, he / she

- (i) Should have passed all the subjects/courses within four academic years or 8 sequential semesters (i.e., whatever the back log subjects have to clear in or before IV- II Regular examinations) from the date of commencement of first year first semester.
- (ii) Should have secured a CGPA \geq 7.50, at the end of each of the 8 sequential semesters, starting from I year I semester onwards.
- (iii) Should not have been detained or prevented from writing the semester end examinations in any semester due to shortage of attendance or any other reason.

A student not fulfilling any of the above conditions with final CGPA \geq 7.5 shall be placed in **“FIRST CLASS”**.

12.4 Students with final CGPA (at the end of the under graduate Programme) \geq 6.50 but $<$ 7.50 shall be placed in **“FIRST CLASS”**.

12.5 Students with final CGPA (at the end of the under graduate Programme) \geq 5.50 but $<$ 6.50, shall be placed in **“SECOND CLASS”**.

12.6 All other students who qualify for the award of the degree (as per item 12.1), with final CGPA (at the end of the under graduate Programme) \geq 5.00 but $<$ 5.50, shall be placed in **“PASS CLASS”**.

12.7 A student with final CGPA (at the end of the under graduate Programme) $<$ 5.00 will not be eligible for the award of the degree.

12.8 Students fulfilling the conditions listed under item 12.3 alone will be eligible for award of **“GOLD MEDAL”**.

13.0 Withholding of results:

13.1 If the student has not paid the fees to the institution at any stage, or has dues pending due to any reason whatsoever, or if any case of indiscipline is pending, the result of the student may be withheld, and the student will not be allowed to go into the next higher semester. The award or issue of the degree may also be withheld in such cases.

14.0 Student transfers:

14.1 There shall be no branch transfers after the completion of admission process.

14.2 Transfer candidates (from non-autonomous college affiliated to JNTUH): A student who is following JNTUH curriculum, transferred from other college to this institute in third semester or subsequent semesters shall join with the autonomous batch in the appropriate semester. Such candidates shall be required to pass in all the courses in the Programme prescribed by the Board of Studies concerned for that batch of students from that semester onwards to be eligible for the award of degree. However, exemption will be given in the courses of the semester(s) of the batch which he had passed earlier and substitute courses are offered in their place as decided by the Board of Studies. The student has to clear all his backlog courses up to previous semester by appearing for the supplementary examinations conducted by JNTUH for the award of degree. The total number of credits to be secured for the award of the degree will be the sum of the credits up to the previous semester under JNTUH regulations and the credits prescribed for the semester in which a candidate joined after transfer and subsequent semesters under the autonomous status. The class will be awarded based on the academic performance of a student in the autonomous pattern.

14.3 Transfer candidates (from an autonomous college affiliated to JNTUH) : A student who has secured the required credits up to previous semesters as per the regulations of other autonomous institutions shall also be permitted to be transferred to this institute. A student who is transferred from the other autonomous colleges to this institute in third semester or subsequent semesters shall join with the autonomous batch in the appropriate semester. Such candidates shall be required to pass in all the courses in the Programme prescribed by the Board of Studies concerned for that batch of students from that semester onwards to be eligible for the award of degree. However, exemption will be given in the courses of the semester(s) of the batch which he had passed earlier and substitute subjects are offered in their place as decided by the Board of Studies. The total number of credits to be secured for the award of the degree will be the sum of the credits up to previous semester as per the regulations of the college from which he is transferred and the credits prescribed for the semester in which a candidate joined after transfer and subsequent semesters under the

autonomous status. The class will be awarded based on the academic performance of a student in the autonomous pattern.

15.0 Scope:

15.1 The academic regulations should be read as a whole, for the purpose of any interpretation.

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

15.3 Where the words “he”, “him”, “his”, occur in the regulations, they include “she”, “her”, “hers”.



MARRI LAXMAN REDDY INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(An Autonomous Institution)
ACADEMIC REGULATIONS FOR B.TECH. (LATERAL ENTRY SCHEME) FROM
THE ACADEMIC YEAR 2020 – 21

1. Eligibility for award of B. Tech. Degree (LES):

The LES students after securing admission shall pursue a course of study for not less than three academic years and not more than six academic years.

- i) The student shall register for 123 credits and secure 123 credits with CGPA ≥ 5 from II year to IV year B.Tech. Programme (LES) for the award of B.Tech degree.
- ii) The students, who fail to fulfill the requirement for the award of the degree in six academic years from the year of admission, shall forfeit their seat in B.Tech.
- iii) The attendance requirements of B.Tech. (Regular) shall be applicable to B.Tech. (LES).

2. Promotion Rule:

S. No	Promotion	Conditions to be fulfilled
1	Second year first semester to second year second semester	Regular course of study of second year first semester.
2	Second year second semester to third year first semester	<ol style="list-style-type: none"> i. Regular course of study of second year second semester. ii. Must have secured 60% credits up to second year second semester from all the relevant regular and supplementary examinations, whether the student takes those examinations or not.
3	Third year first semester to third year second semester	Regular course of study of third year first semester.
4	Third year second semester to fourth year first semester	<ol style="list-style-type: none"> i. Regular course of study of third year second semester. ii. Must have secured 60% credits up to third year second semester from all the relevant regular and supplementary examinations, whether the student takes those examinations or not.
5	Fourth year first semester to fourth year second semester	Regular course of study of fourth year first semester.

- 3.** All the other regulations as applicable to B. Tech. 4-year degree course (Regular) will hold good for B. Tech. (Lateral Entry Scheme).

MALPRACTICES RULES
DISCIPLINARY ACTION FOR / IMPROPER CONDUCT IN EXAMINATIONS

S. No	Nature of Malpractices / Improper conduct	Punishment
	If the student:	
1. (a)	Possesses or keeps accessible in examination hall, any paper, note book, Programmable calculators, cell phones, pager, palm computers or any other form of material concerned with or related to the subject of the examination (theory or practical) in which student is appearing but has not made use of (material shall include any marks on the body of the student which can be used as an aid in the subject of the examination)	Expulsion from the examination hall and cancellation of the performance in that subject only.
(b)	Gives assistance or guidance or receives it from any other student orally or by any other body language methods or communicates through cell phones with any student 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 students 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)	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the student 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 . The hall ticket of the student is to be cancelled and sent to the University.
3	Impersonates any other student in connection with the examination.	The student who has impersonated shall be expelled from examination hall. The student is also debarred and forfeits the seat. The performance of the original student 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. The student is also debarred for two consecutive semesters from class work and all University examinations. The continuation of the course by the student 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 student has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semesters. The student is also debarred for two consecutive semesters from class work and all University examinations. The continuation of the course by the student is subject to the academic regulations in connection with forfeiture of seat.
5	Uses objectionable, abusive or offensive language in the answer paper or in letters to the examiners or writes to the examiner requesting him to award pass marks.	Cancellation of the performance in that subject.
6	Refuses to obey the orders of the 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 student(s) has (have) already appeared and shall not be permitted to appear for the remaining examinations of the subjects of that semester. The students 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 student has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester. The student is also debarred for two

		consecutive semesters from class work and all University examinations. The continuation of the course by the student is subject to the academic regulations in connection with forfeiture of seat.
8	Possesses 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 student has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester. The student is also debarred and forfeits the seat.
9	If student of the college, who is not a student 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.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the student has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester. The student is also debarred and forfeits the seat. Person(s) who do not belong to the college will be handed over to the 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 student has already appeared for including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester.
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 student has appeared for including practical examinations and project work of that semester 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 a suitable punishment.	



MARRI LAXMAN REDDY **INSTITUTE OF TECHNOLOGY AND MANAGEMENT**

(AN AUTONOMOUS INSTITUTION)

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)

Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section 2(f) & 12(B) of the UGC act, 1956

B. Tech - Mechanical Engineering

Course Structure (R20)

Applicable From 2020-21 Admitted Batch

Structure Breakup

S.No	Category	Breakup of credits (Total 160 credits)
1	Humanities and Social Sciences including Management courses (HSMC)	8
2	Basic Sciences Courses (BS)	23
3	Engineering Sciences courses including Workshop, Drawing basics of electrical/mechanical/computer etc.(ES)	22
4	Professional Core courses (PC)	67
5	Professional Electives (PE)	18
6	Open Electives (OE)	9
7	Project work, Seminar and Internship in industry or elsewhere (PS)	13
8	Mandatory Courses	0
	TOTAL	160