

ACADEMIC REGULATIONS AND COURSE STRUCTURE

CHOICE BASED CREDIT SYSTEM

MLR18

Master of Technology (M.Tech)

**M. Tech. - Regular Two Year Degree Program
(For batches admitted from the academic year 2018 - 2019)**



MLR Institute of Technology

(Autonomous)

Laxman Reddy Avenue, Dundigal
Hyderabad – 500043, Telangana State
www.mlrinstitutions.ac.in Email: director@mlrinstitutions.ac.in

FOREWORD

The autonomy is conferred on MLR Institute of Technology by UGC 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 like UGC and AICTE. It reflects the confidence of the UGC in the autonomous institution to uphold and maintain standards it expects to deliver on its own behalf and thus awards degrees on behalf of the college. Thus, an autonomous institution is given the freedom to have its own **curriculum, examination system and monitoring mechanism**, independent of the affiliating University but under its observance.

MLR Institute of Technology 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 like Academic Council and Boards of Studies are constituted with the guidance of the Governing Body of the College and recommendations of the JNTU Hyderabad 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 college to order to produce quality engineering graduates to the society.

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

PRINCIPAL

**M. Tech. - Regular Two Year Degree Program
(For batches admitted from the academic year 2018 - 19)**

For pursuing two year post graduate Masters Degree Programme of study in Engineering (M.Tech) offered by MLR Institute of Technology under Autonomous status and herein referred to as MLRIT (Autonomous):

All the rules specified herein approved by the Academic Council will be in force and applicable to students admitted from the Academic Year 2018-19 onwards. Any reference to “Institute” or “College” in these rules and regulations shall stand for MLR Institute of Technology (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, MLR Institute of Technology shall be the Chairman, Academic Council.

1. ADMISSION

Admission into first year of two year M. Tech. degree Program of study in Engineering:

Eligibility:

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

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

2. AWARD OF M. Tech. DEGREE

A student shall be declared eligible for the award of the M. Tech. Degree, if he pursues a course of study in not less than two and not more than four academic years. However, he is permitted to write the examinations for two more years after two academic years of course work, failing which he shall forfeit his seat in M. Tech. programme.

The student shall register for all 68 credits and secure all the 68 credits.

The minimum instruction days in each semester are 68.

3. COURSES OF STUDY

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

1. Aerospace Engineering
2. CAD/CAM
3. Computer Science and Engineering
4. Digital Systems & Computer Electronics
5. Embedded Systems
6. Thermal Engineering

4. Course Registration

4.1 A ‘Faculty Advisor or Counselor’ shall be assigned to each student, who will advise him on the Post Graduate Programme (PGP), its Course Structure and Curriculum, Choice / Option for Courses, based on his competence, progress, pre-requisites and interest.

4.2 Academic Section of the College invites ‘Registration Forms’ from students within 15 days from the commencement of class work, ensuring ‘DATE and TIME Stamping’. The 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 Registration, ONLY AFTER obtaining the 'WRITTEN APPROVAL' from his Faculty Advisor, which should be submitted to the College Academic Section through the Head of Department (a copy of it being retained with Head of Department, Faculty Advisor and the Student).
- 4.4 If the Student submits ambiguous choices or multiple options or erroneous entries - during Registration for the Course(s) under a given/ specified Course Group/ Category as listed in the Course Structure, only the first mentioned Course in that Category will be taken into consideration.
- 4.5 Course Registration are final and CANNOT be changed, nor can they be inter-changed; further, alternate choices will also not be considered. However, if the Course that has already been listed for Registration (by the Head of 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 course (subject to offering of such a course), or for another existing course (subject to availability of seats), which may be considered. Such alternate arrangements will be made by the Head of Department, with due notification and time-framed schedule, within the FIRST WEEK from the commencement of Class-work for that Semester.

5. ATTENDANCE

The programmes are offered on a unit basis with each subject being considered a unit.

- 5.1 Attendance in all classes (Lectures/Laboratories etc.) is compulsory. The minimum required attendance in each theory / Laboratory etc. is 75% including the days of attendance in sports, games, NCC and NSS activities for appearing for the End Semester examination. A student shall not be permitted to appear for the Semester End Examinations (SEE) if his attendance is less than 75%.
- 5.2 Condonation of shortage of attendance in each subject up to 10% (65% and above and below 75%) in each semester shall be granted by the College Academic Committee.
- 5.3 Shortage of Attendance below 65% in each subject shall not be condoned.
- 5.4 Students whose shortage of attendance is not condoned in any subject are not eligible to write their end semester examination of that subject and their registration shall stand cancelled.
- 5.5 A prescribed fee shall be payable towards condonation of shortage of attendance.
- 5.6 A Candidate shall put in a minimum required attendance at least three (3) theory courses in I Year I semester for promoting to I Year II Semester. In order to qualify for the award of the M.Tech. Degree, the candidate shall complete all the academic requirements of the courses, as per the course structure.
- 5.7 A student shall not be promoted to the next semester unless he satisfies the attendance requirement of the present Semester, as applicable. They may seek readmission into that semester when offered next. If any candidate fulfills the attendance requirement in the present semester, he shall not be eligible for readmission in to the same class.

6. 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 practical's, on the basis of Internal Evaluation and End Semester Examination.

- For the theory courses 70 marks shall be awarded for the performance in the Semester End Examination and 30 marks shall be awarded for Continuous Internal Evaluation (CIE). The Continuous 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 Semester instructions. Each mid-term examination shall be conducted for a total duration of 120 minutes.

Continues Internal Examination (CIE)

- Subjective Paper shall contain three questions. Question 1 & 2 with internal choice from unit-I, question 3 & 4 with internal choice from unit-II and question no 5 & 6 may be having a, b sub questions with internal choice from first half part of unit-III for CIE-I. For CIE-II 1 & 2 questions from unit-4, questions 3 & 4 from unit-5 and question no 5 & 6 from remaining half part of unit-3. 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. Question no. 1 to 6 carries 10 Marks.

Semester End Examination (SEE)

- The Semester End Examination will be conducted for 70 marks examination shall be conducted for a total duration of 180 minutes. Question paper consists of Part–A and Part-B with the following.
 - Part-A is a compulsory question consisting of 5 questions, one from each unit and carries 4 marks each.
 - Part-B to be answered 5 questions carrying 10 marks each. There will be two questions from each unit and only one should be answered.
- 6.1 For practical courses, 70 marks shall be awarded for performance in the Semester End Examinations and 30 marks shall be awarded for day-to-day performance as Internal Marks.
- 6.2 For conducting laboratory end examinations of all PG Programmes, one internal examiner and one external examiner are to be appointed by the Chief Controller of Examination in one week before for commencement of the lab end examinations.
- 6.3 There shall be a seminar presentations during II year I 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 the Departmental Academic 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 of 100 marks. A candidate has to secure a minimum of 50% of marks to be declared successful. If he fails to fulfill minimum marks, he has to reappear during the supplementary examinations.
- 6.4 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 Semester End Examination and a minimum aggregate of 50% of the total marks in the Semester End Examination and Continuous Internal Evaluation taken together.
- 6.5 In case the candidate does not secure the minimum academic requirement in any subject (as specified in 6.6) he has to re appear for the Semester End Examination in that course.
- 6.6 A candidate shall be given one chance to re-register for the courses if the internal marks secured by a candidate is less than 50% and failed in that course for maximum of two courses and should register within four weeks of commencement of the class work. In such a case, the candidate must re-register for the courses 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 Semester End Examination in those courses. In the event of the student taking another chance, his Continuous Internal Evaluation (internal) marks and Semester End Examination marks obtained in the previous attempt stands cancelled.
- 6.7 In case the candidate secures less than the required attendance in any course, he shall not be permitted to write the Semester End Examination in that course. He shall re-register for the course when next offered.

6.8 Offering one open elective courses in III-Semester along with core and specialized courses as a part of inculcating knowledge to the student.

7. Examinations and Assessment - The Grading System

7.1 Marks will be awarded to indicate the performance of each student in each Theory Course, or Lab/Practicals, or Seminar, or Project, etc., based on the % marks obtained in CIE + SEE (Continuous Internal Evaluation + Semester End Examination, both taken together) as specified in Item6above, and a corresponding Letter Grade shall be given.

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

% of Marks Secured (Class Intervals)	Letter Grade (UGC Guidelines)	Grade Points
90% and above ($\geq 90\%$, $\leq 100\%$)	O (Outstanding)	10
Below 90% but not less than 80% ($\geq 80\%$, $< 90\%$)	A ⁺ (Excellent)	9
Below 80% but not less than 70% ($\geq 70\%$, $< 80\%$)	A (Very Good)	8
Below 70% but not less than 60% ($\geq 60\%$, $< 70\%$)	B ⁺ (Good)	7
Below 60% but not less than 50% ($\geq 50\%$, $< 60\%$)	B (above Average)	6
Below 50% ($< 50\%$)	F (FAIL)	0
Absent	AB	0

7.3 A student obtaining F Grade in any Course shall be considered 'failed' and is be required to reappear as 'Supplementary Candidate' in the Semester End Examination (SEE), as and when offered. In such cases, his Internal Marks (CIE Marks) in those Courses will remain the same as those he obtained earlier.

7.4 A student not appeared for examination then 'AB' Grade will be allocated in any Course shall be considered 'failed' and will be required to reappear as 'Supplementary Candidate' in the Semester End Examination (SEE), as and when offered.

7.5 A Letter Grade does not imply any specific Marks percentage and it will be the range of marks percentage.

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

7.7 A student earns Grade Point (GP) in each Course, on the basis of the Letter Grade obtained by him in that Course. The corresponding 'Credit Points' (CP) are computed by multiplying the Grade Point with Credits for that particular Subject / Course.

$$\text{Credit Points (CP)} = \text{Grade Point (GP)} \times \text{Credits} \dots \text{ For a Course}$$

7.8 The Student passes the Course only when he gets GP ≥ 6 (B Grade or above).

7.9 A student earns Grade Point (GP) in each Course, on the basis of the Letter Grade obtained by him in that Course (excluding Mandatory non-credit Courses). Then the corresponding 'Credit Points' (CP) are computed by multiplying the Grade Point with Credits for that particular Course.

$$\text{Credit Points (CP)} = \text{Grade Point (GP)} \times \text{Credits} \dots \text{ For a Course}$$

7.10 The Semester Grade Point Average (SGPA) is calculated by dividing the Sum of Credit Points (Σ CP)secured from ALL 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

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

where 'i' is the Course indicator index (takes into account all Courses in a Semester), 'N' is the no. of Courses '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 that ix Course, and G_i represents the Grade Points (GP) corresponding to the Letter Grade awarded for that ith Course.

Illustration of Computation of SGPA

Course	Credit	Grade Letter	Grade Point	Credit Point (Credit x Grade)
Course1	3	A	8	3 x 8 = 24
Course2	4	B+	7	4 x 7 = 28
Course3	3	B	6	3 x 6 = 18
Course4	3	O	10	3 x 10 = 30
Course5	3	C	5	3 x 5 = 15
Course6	4	B	6	4 x 6 = 24

Thus, **SGPA = 139/20 = 6.95**

7.11 The Cumulative Grade Point Average (CGPA) is a measure of the overall cumulative performance of a student over 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 Second Semester onwards, at the end of each Semester, as per the formula

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

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

where 'M' is the TOTAL no. of Courses (as specifically required and listed under the Course Structure of the parent Department) the Student has 'REGISTERED' from the 1st Semester onwards upto and inclusive of the Semester S (obviously $M > N$), 'j' is the Course indicator index (takes into account all Courses from 1 to S Semesters), C_j is the no. of Credits allotted to the jth Course, and G_j represents the Grade Points (GP) corresponding to the Letter Grade awarded for that jth Course. After registration and completion of I Year I Semester however, the SGPA of that Semester itself may be taken as the CGPA, as there are no cumulative effects.

For CGPA Computation

Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6
Credits : 20 SGPA : 6.9	Credits : 22 SGPA : 7.8	Credits : 25 SGPA : 5.6	Credits : 26 SGPA : 6.0	Credits : 26 SGPA : 6.3	Credits : 25 SGPA : 8.0

$$\text{Thus, CGPA} = \frac{20 \times 6.9 + 22 \times 7.8 + 25 \times 5.6 + 26 \times 6.0 + 26 \times 6.3 + 25 \times 8.0}{144} = 6.73$$

144

7.12 For Calculations listed in Item 7.6 – 7.10, performance in failed Courses (securing F Grade) will also be taken into account, and the Credits of such Courses will also be included in the multiplications and summations.

7.13 No SGPA/CGPA is declared, if a candidate is failed in any one of the courses of a given semester.

7.14 Conversion formula for the conversion of GPA into indicative percentage is
$$[\text{CGPA Earned} - 0.50] \times 10 = \% \text{ of marks scored}$$

8. EVALUATION OF PROJECT/DISSERTATION WORK

Every candidate shall be required to submit a thesis or dissertation on a topic approved by the Project Review Committee.

8.1 A Project Review Committee (PRC) shall be constituted with Head of the Department as Chairperson, Project Supervisor and one senior faculty member of the Departments offering the M. Tech. programme.

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

8.3 After satisfying 8.2, a candidate has to submit, in consultation with his Project Supervisor, the title, objective and plan of action of his project work to the PRC for approval. Only after obtaining the approval of the PRC the student can initiate the Project work.

8.4 If a candidate wishes to change his supervisor or topic of the project, he can do so with the approval of the PRC. However, the PRC shall examine whether or not the change of topic/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.

8.5 A candidate shall submit his project status report in two stages at least with a gap of three months between them.

8.6 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 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. For the approval of PRC the candidate shall submit the draft copy of thesis to the Head of the Department and make an oral presentation before the PRC.

8.7 After approval from the PRC, the soft copy of the thesis should be submitted to the College for ANTI-PLAGIARISM for the quality check and the plagiarism report should be included in the final thesis. If the copied information is less than 30%, then only thesis will be accepted for submission.

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

8.9 For Dissertation Phase-I in II Year I Sem. there is an internal marks of 100, the evaluation should be done by the PRC for 50 marks and Supervisor will evaluate for 50 marks. The Supervisor and PRC will examine the Problem Definition, Objectives, Scope of Work and Literature Survey in the same domain. A candidate has to secure a minimum of 50% of marks to be declared successful for Project Phase-I. If he fails to fulfill minimum marks, he has to reappear during the supplementary examination.

8.10 For Dissertation Phase-II (Viva Voce) in II Year II Sem. There is an internal marks of 50, the evaluation should be done by the PRC for 25 marks and Supervisor will evaluate for 25 marks. The PRC will examine the overall progress of the Project Work and decide the Project is eligible for final submission or not. There is an external marks of 150 and the same evaluated by the External examiner appointed by the Chief Controller of Examinations and he secures a minimum of 40% of marks in the Semester End Examination and a minimum aggregate of 50% of the total marks in the Semester End Examination and Continuous Internal Evaluation taken together.

- 8.11 If he fails to fulfill as specified in 8.10, he will reappear for the Viva-Voce examination only after three months. In the reappeared examination also, fails to fulfill, he will not be eligible for the award of the degree.
- 8.12 The thesis shall be adjudicated by one examiner selected by the Chief Controller of Examinations. For this, the HOD of the Department shall submit a panel of 3 examiners, eminent in that field, with the help of the guide concerned and Head of the Department.
- 8.13 If the report of the examiner is not favorable, the candidate shall revise and resubmit the Thesis. If the report of the examiner is unfavorable again, the thesis shall be summarily rejected.
- 8.14 If the report of the examiner is favorable, Project dissertation shall be conducted by a board consisting of the Supervisor, Head of the Department and the external examiner who adjudicated the Thesis.
- 8.15 The Head of the Department shall coordinate and make arrangements for the conduct of Project dissertation.
- 8.16 For Audit Course(Non-Credit Courses) offered in a Semester, after securing $\geq 65\%$ attendance and has secured not less than 40% marks in the SEE, and a minimum of 50% of marks in the sum Total of the CIE and SEE taken together in such a course, then the student is **PASS** and will be qualified for the award of the degree. No marks or Letter Grade shall be allotted for these courses/activities. However, for non credit courses '**Satisfactory**' or '**Unsatisfactory**' shall be indicated instead of the letter grade and this will not be counted for the computation of SGPA/CGPA.

9 AWARD OF DEGREE AND CLASS

9.1 A Student who registers for all the specified Courses/ Courses as listed in the Course Structure, satisfies all the Course Requirements, and passes the examinations prescribed in the entire PG Programme (PGP), and secures the required number of 90 Credits (with CGPA ≥ 6.0), shall be declared to have 'QUALIFIED' for the award of the M.Tech. Degree in the chosen Branch of Engineering and Technology with specialization as he admitted.

9.2 Award of Class

After a student has satisfied the requirements prescribed for the completion of the programme and is eligible for the award of M. Tech. Degree, he shall be placed in one of the following three classes based on the CGPA:

Class Awarded	Grade to be Secured
First Class with Distinction	CGPA ≥ 8.00
First Class	≥ 7.00 to < 8.00 CGPA
Second Class	≥ 6.00 to < 7.00 CGPA

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

10. WITHOLDING 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 and he will not be allowed into the next semester. His degree will be with held in such cases.

11. TRANSITORY REGULATIONS

- 11.1 If any candidate is detained due to shortage of attendance in one or more courses, they are eligible for re-registration to maximum of two earlier or equivalent courses at a time as and when offered.
- 11.2 The candidate who fails in any course will be given two chances to pass the same course; otherwise, he has to identify an equivalent course as per MLR18 Academic Regulations.

12 SUPPLEMENTARY EXAMINATIONS

Supplementary examinations for the odd semester shall be conducted with the regular examinations of even semester and vice versa, for those who appeared and failed or absent in regular examinations. Such candidates writing supplementary examinations may have to write more than one examination.

13. REVALUATION

Students shall be permitted for revaluation after the declaration of end semester examination results within due dates by paying prescribed fee. After revaluation if there is any betterment in the grade, then improved grade will be considered. Otherwise old grade shall be retained.

14. AMENDMENTS TO REGULATIONS

The Academic Council of MLR Institute of Technology reserves the right to revise, amend, or change the regulations, scheme of examinations, and / or syllabi or any other policy relevant to the needs of the society or industrial requirements etc., without prior notice.

15. GENERAL

- 15.1 **Credit:** A unit by which the course work is measured. It determines the number of hours of instructions required per week. One credit is equivalent to one hour of teaching (lecture or tutorial) or two hours of practical work/field work per week.
- 15.2 **Credit Point:** It is the product of grade point and number of credits for a course.
- 15.3 Wherever the words “he”, “him”, “his”, occur in the regulations, they include “she”, “her”.
- 15.4 The academic regulation should be read as a whole for the purpose of any interpretation.
- 15.5 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.

MALPRACTICES RULES - DISCIPLINARY ACTION FOR /IMPROPER CONDUCT IN EXAMINATIONS

S. No	Nature of Malpractices / Improper Conduct	Punishment
1 (a)	Possesses or keeps accessible in examination hall, any paper, note book, programmable calculators, Cell phones, pager, palm computers or any other form of material concerned with or related to the course of the examination (theory or practical) in which he is appearing but has not made use of (material shall include any marks on the body of the candidate which can be used as an aid in the course of the examination)	Expulsion from the examination hall and cancellation of the performance in that course only.
(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 course 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 course of the examination (theory or practical) in which the candidate is appearing.	Expulsion from the examination hall and cancellation of the performance in that course and all other courses the candidate has already appeared including practical examinations and project work and shall not be permitted to appear for the remaining examinations of the courses of that Semester/year. The Hall Ticket of the candidate is to be cancelled and sent to the Principal.
3	Impersonates any other candidate in connection with the examination.	The candidate who has impersonated shall be expelled from examination hall. The candidate is also debarred and forfeits the seat. The performance of the original candidate who has been impersonated, shall be cancelled in all the courses of the examination (including practical's and project work) already appeared and shall not be allowed to appear for examinations of the remaining courses of that semester/year. The candidate is also debarred for two consecutive semesters from class work and all examinations. The continuation of the course by the candidate is course 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 course and all the other courses the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the courses of that semester/year. The candidate is also debarred for two consecutive semesters from class work and all examinations. The continuation of the course by the candidate is course 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 course.
6	Refuses to obey the orders of the Addl. Controller of examinations / any officer on duty or misbehaves or creates disturbance of any kind in and around the examination hall or organizes a walk out or instigates others to walk out, or threatens the addl. Controller of examinations or any person on duty in or outside the examination hall of any injury to his person or to any of his relations whether by words, either spoken or written or by signs or by visible representation, assaults the addl. Controller of examinations, or any person on duty in or outside the examination hall or any of his relations, or indulges in any other act of misconduct or mischief which result in damage to or destruction of property in the examination hall or any part of the College campus or engages in any other act which in the opinion of the officer on duty amounts to use of unfair means or misconduct or has the tendency to disrupt the orderly conduct of the examination.	In case of students of the college, they shall be expelled from examination halls and cancellation of their performance in that course and all other courses the candidate(s) has (have) already appeared and shall not be permitted to appear for the remaining examinations of the courses 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 course and all the other courses the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the courses of that semester/year. The candidate is also debarred for two consecutive semesters from class work and

		all examinations. The continuation of the course by the candidate is course 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 course and all other courses the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the courses 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 course and all other courses the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the courses 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 course and all other courses the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the courses 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 course and all other courses 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 principal for further action to award suitable punishment.	

COURSE STRUCTURE

AEROSPACE ENGINEERING

I M.Tech I Semester									
Course Code	Course Title	Category	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
B37601	Aerodynamics of Flight Vehicles	CC	3	-	-	3	30	70	100
B37602	Flight Vehicle Structures	CC	3	-	-	3	30	70	100
B37603	Aerospace Propulsion	CC	3	-	-	3	30	70	100
	Professional Elective - I	PE	3	-	-	3	30	70	100
	Professional Elective – II	PE	3	-	-	3	30	70	100
B37610	Aerodynamics and Propulsion Lab	CC	-	-	3	1.5	30	70	100
B37611	Aero Structures Simulation Lab	CC	-	-	3	1.5	30	70	100
	Audit Course-I	AC	2	-	-	-	30	70	100
TOTAL			17	-	6	18	240	560	800

I M.Tech II Semester									
Course Code	Course Title	Category	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
B37612	Advance Finite Element Method	CC	3	-		3	30	70	100
B37613	Avionics	CC	3	-		3	30	70	100
B37614	Computational Approaches to Aerospace Vehicle Design	CC	3			3	30	70	100
	Professional Elective – III	PE	3	-		3	30	70	100
	Professional Elective – IV	PE	3	-		3	30	70	100
B37621	Composite materials and Structures Lab	CC	-	-	3	1.5	30	70	100
B37622	Simulation Lab	CC	-	-	3	1.5	30	70	100
	Audit Course -II	AC	2	-	-	-	30	70	100
TOTAL			17	-	6	18	240	560	800

II M.Tech I Semester									
Course Code	Course Title	Category	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
	Professional Elective –V	PE	3	-		3	30	70	100
	Open Elective – I	OE	3	-		3	30	70	100
B37630	Technical Seminar	SEM	2	-	-	2	100	-	100
B37631	Dissertation Phase-I	PWC	-	-	16	8	100	-	100
TOTAL			8	-	16	16	260	140	400

II M.Tech II Semester									
Course Code	Course Title	Category	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
B37632	Dissertation Phase-II	PWC	-	-	32	16	50	150	200
TOTAL			-	-	32	16	50	150	200

PROFESSIONAL ELECTIVES				
PE-1		PE-2		
B37604	Numerical Heat transfer	B27607	Space mechanics	
B37605	Mathematical Modeling	B27608	Helicopter Aerodynamics	
B37606	Continuum Mechanics	B27609	Flight Navigation and Surveillance Systems	
PE-3		PE-4		
B37615	Mechanics of composite structures	B27618	Cryogenic Engineering	
B37616	Hypersonic Aerodynamics	B27619	Experimental stress analysis	
B37617	Flight vehicle Design	B27620	Aero elasticity	
PE-5				
B37623	Fatigue and Fracture Mechanics			
B37624	Computational Structural Analysis			
B37625	Engineering Plasticity			

OPEN ELECTIVES		
B37626	Air Transportation Systems	Aerospace Engineering
B37627	Thermal analysis of aerospace structures	
B37628	Satellite technology	

COMPUTER SCIENCE & ENGINEERING

I M.Tech I Semester									
Course Code	Course Title	Category	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
B35801	Advanced Data Structures	CC	3	-	-	3	30	70	100
B35802	Cloud Computing	CC	3	-	-	3	30	70	100
B35803	Advanced Database Engineering	CC	3	-	-	3	30	70	100
	Professional Elective - I	PE	3	-	-	3	30	70	100
	Professional Elective - II	PE	3	-	-	3	30	70	100
B35810	Advanced Data Structures Lab	CC	-	-	3	1.5	30	70	100
B35811	Cloud Computing Lab	CC	-	-	3	1.5	30	70	100
	Audit Course - I	AC	2	-	-	-	30	70	100
TOTAL			17	-	6	18	240	360	800

I M.Tech II Semester									
Course Code	Course Title	Category	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
B35812	Advanced Algorithms	CC	3	-	-	3	30	70	100
B35813	Big Data Analytics	CC	3	-	-	3	30	70	100
B35814	Advanced Computer Networks	CC	3	-	-	3	30	70	100
	Professional Elective – III	PE	3	-	-	3	30	70	100
	Professional Elective – IV	PE	3	-	-	3	30	70	100
B35821	Advanced Algorithms Lab	CC	-	-	3	1.5	30	70	100
B35822	Big Data Analytics Lab	CC	-	-	3	1.5	30	70	100
	Audit Course - II	AC	2	-	-	-	30	70	100
TOTAL			17	-	6	18	240	360	800

II M.Tech I Semester									
Course Code	Course Title	Category	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
	Professional Elective - V	PE	3	-	-	3	30	70	100
	Open Elective	OE	3	-	-	3	30	70	100
B35830	Technical Seminar	SEM	2	-	-	2	100	-	100
B35831	Dissertation Phase - I	PWC	-	-	16	8	100	-	100
TOTAL			8	-	16	16	260	140	400

II M.Tech II Semester									
Course Code	Course Title	Category	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
B35832	Dissertation Phase - II	PWC	-	-	32	16	50	150	200
TOTAL			-	-	32	16	50	150	200

PROFESSIONAL ELECTIVES									
PE- I					PE – II				
B35804	Web Services and Service Oriented Architecture				B35807	Ethical Hacking			
B35805	Data Mining				B35808	Mobile Computing			
B35806	Mathematical Foundations of Computer Science				B35809	Advanced Computer Architecture			
PE - III					PE – IV				
B35815	Software Testing Methodologies				B35818	Human and Computer Interaction			
B35816	Soft Computing				B35819	Parallel Computing			
B35817	Information Security				B35820	Digital Forensics			
PE – V									
B35823	Social Media Mining								
B35824	Advanced Operating Systems								
B35825	Optimization Techniques								

OPEN ELECTIVES									
B35826	Software Project Management								
B35827	Internet of Things								
B35828	Adhoc & Sensor Networks								
B35829	Information Retrieval Systems								

AUDIT COURSE I					AUDIT COURSE II				
B3AC01	English for Research Paper Writing				B3AC03	Disaster Management			
B3AC02	Research Methodology and IPR				B3AC04	Constitution of India			

DIGITAL SYSTEM AND COMPUTER ELECTRONICS

I M.Tech I Semester									
Course Code	Course Title	Category	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
B30601	RTL Simulation and Synthesis with PLDs	PCC	3	-	-	3	30	70	100
B30602	Wireless LANs and PANs	PCC	3	-	-	3	30	70	100
B30603	Microcontrollers for Embedded System Design	PCC	3	-	-	3	30	70	100
	Professional Elective Course-I	PEC	3	-	-	3	30	70	100
	Professional Elective Course-II	PEC	3	-	-	3	30	70	100
B30610	RTL Simulation and Synthesis with PLDs Lab	PCC	-	-	3	1.5	30	70	100
B30611	Microcontrollers for Embedded System Lab	PCC	-	-	3	1.5	30	70	100
	Audit Course-I	AC	2	-	-	-	30	70	100
TOTAL			17	-	6	18	240	560	800

I M.Tech II Semester									
Course Code	Course Title	Category	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
B30612	Design of fault tolerant Systems	PCC	3	-	-	3	30	70	100
B30613	VLSI Design verification and testing	PCC	3	-	-	3	30	70	100
B30614	Image and Video Processing	PCC	3	-	-	3	30	70	100
	Professional Elective Course-III	PEC	3	-	-	3	30	70	100
	Professional Elective Course-IV	PEC	3	-	-	3	30	70	100
B30621	Advanced Embedded System Design Lab	PCC	-	-	3	1.5	30	70	100
B30622	VLSI Design verification and testing Lab	PCC	-	-	3	1.5	30	70	100
	Audit Course-II	AC	2	-	-	-	30	70	100
TOTAL			17	-	6	18	240	560	800

II M.Tech I Semester									
Course Code	Course Title	Category	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
	Professional Elective Course-V	PEC	3	-	-	3	30	70	100
	Open Elective Course	OEC	3	-	-	3	30	70	100
B30630	Dissertation Phase – I	PWC	-	-	16	8	100	-	100
B30631	Technical Seminar	SEM	2	-	-	2	100	-	100
TOTAL			8	-	16	16	260	140	400

II M.Tech II Semester									
Course Code	Course Title	Category	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
B30632	Dissertation Phase – II	PWC	-	-	32	16	50	150	200
TOTAL			-	-	32	16	50	150	200

PROFESSIONAL ELECTIVES			
PE-I		PE-II	
B30604	Low Power VLSI design	B30607	Parallel Processing
B30605	Programming Languages for Embedded Software	B30608	CAD of Digital System design
B30606	VLSI signal processing	B30609	CMOS Analog IC Design
PE-III		PE-IV	
B30615	Memory Technologies	B30618	Embedded RTOS
B30616	SoC Design	B30619	Network Security and Cryptography
B30617	CMOS digital IC design	B30620	CMOS Mixed Signal Design
PE-V			
B30623	Algorithm for VLSI design		
B30624	Digital Signal Processing Architectures		
B30625	Ad-hoc and Wireless Sensor Networks		

OPEN ELECTIVES	
B30626	Principle of Signal Processing
B30627	Introduction to Embedded Systems
B30628	Introduction to Integrated Circuit Design

AUDIT COURSE I		AUDIT COURSE II	
B3AC01	English for Research Paper Writing	B3AC03	Disaster Management
B3AC02	Research Methodology and IPR	B3AC04	Constitution of India
B30424	Business Analytics		

EMBEDDED SYSTEMS

I M.Tech I Semester									
Course Code	Course Title	Category	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
B35501	Embedded Networking	PCC	3	-	-	3	30	70	100
B35502	Wireless LANs and PANs	PCC	3	-	-	3	30	70	100
B35503	Microcontrollers for Embedded System Design	PCC	3	-	-	3	30	70	100
	Professional Elective Course-I	PEC	3	-	-	3	30	70	100
	Professional Elective Course-II	PEC	3	-	-	3	30	70	100
B35510	Simulation Lab	PCC	-	-	3	1.5	30	70	100
B35511	Microcontrollers for Embedded System Lab	PCC	-	-	3	1.5	30	70	100
	Audit Course-I	AC	2	-	-	-	30	70	100
Total			17	-	6	18	240	560	800

I M.Tech II Semester									
Course Code	Course Title	Category	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
B35512	Embedded System Design	PCC	3	-	-	3	30	70	100
B35513	VLSI Design Verification and Testing	PCC	3	-	-	3	30	70	100
B35514	Image and Video Processing	PCC	3	-	-	3	30	70	100
	Professional Elective Course-III	PEC	3	-	-	3	30	70	100
	Professional Elective Course-IV	PEC	3	-	-	3	30	70	100
B35521	Embedded Systems Design Lab	PCC	-	-	3	1.5	30	70	100
B35522	VLSI Design Verification and Testing Lab	PCC	-	-	3	1.5	30	70	100
	Audit Course-II	AC	2	-	-	-	30	70	100
Total			17	-	6	18	240	560	800

II M.Tech I Semester									
Course Code	Course Title	Category	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
	Professional Elective Course-V	PEC	3	-	-	3	30	70	100
	Open Elective Course	OEC	3	-	-	3	30	70	100
B35530	Dissertation Phase – I	PWC	-	-	16	8	100	-	100
B35531	Technical Seminar	SEM	2	-	-	2	100	-	100
Total			8	-	16	16	260	140	400

II M.Tech II Semester									
Course Code	Course Title	Category	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
B35532	Dissertation Phase – II	PWC	-	-	32	16	50	150	200
Total			-	-	32	16	50	150	200

PROFESSIONAL ELECTIVES									
PE-I					PE-II				
B35504	Modern Digital Signal Processing				B35507	Parallel Processing			
B35505	Programming Languages for Embedded Software				B35508	CAD of Digital System design			
B35506	VLSI signal processing				B35509	Embedded Real Time Operating Systems			
PE-III					PE-IV				
B35515	Memory Technologies				B35518	Device Drivers of Embedded Systems			
B35516	SoC Design				B35519	Network Security and Cryptography			
B35517	System Design with Embedded Linux				B35520	Embedded Systems with IoT			
PE-V									
B35523	Data Communication Networks								
B35524	Digital Signal Processing Architectures								
B35525	Nano Materials and Nano Technology								

OPEN ELECTIVES									
B35526	Principle of signal Processing								
B35527	Introduction to Embedded systems								
B35528	Waste to Energy								

AUDIT COURSE I					AUDIT COURSE II				
B3AC01	English for Research Paper Writing				B3AC03	Disaster Management			
B3AC02	Research Methodology and IPR				B3AC04	Constitution of India			

THERMAL ENGINEERING

I M.Tech I Semester									
Course Code	Course Title	Category	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
B32101	Thermodynamics and Combustion	PCC	3	-	-	3	30	70	100
B32102	Computational Fluid Dynamics	PCC	3	-	-	3	30	70	100
B32103	Steam Engineering	PCC	3	-	-	3	30	70	100
	Professional Elective Course-I	PEC	3	-	-	3	30	70	100
	Professional Elective Course-II	PEC	3	-	-	3	30	70	100
B32108	Advanced Thermodynamics Lab	PCC	-	-	3	1.5	30	70	100
B32109	Computational Fluid Dynamics Lab	PCC	-	-	3	1.5	30	70	100
	Audit Course-I	MC	2	-	-	-	30	70	100
TOTAL			16	-	6	18	240	560	800

I M.Tech II Semester									
Course Code	Course Title	Category	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
B32110	Advanced Heat Transfer	PCC	3	-	-	3	30	70	100
B32111	Advanced Fluid Dynamics	PCC	3	-	-	3	30	70	100
	Professional Elective Course-III	PEC	3	-	-	3	30	70	100
	Professional Elective Course-IV	PEC	3	-	-	3	30	70	100
B32116	Advanced I.C. Engines	PCC	3	-	-	3	30	70	100
B32117	Heat Transfer Simulation Lab	PCC	-	-	3	1.5	30	70	100
B32118	Advanced Fluid Dynamics Lab	PCC	-	-	3	1.5	30	70	100
	Audit Course-II	MC	2	-	-	-	30	70	100
TOTAL			14	-	12	18	240	560	800

II M.Tech I Semester									
Course Code	Course Title	Category	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
	Professional Elective Course-V	PEC	3	-	-	3	30	70	100
	Open Elective Course	OEC	3	-	-	3	30	70	100
B32130	Dissertation Phase-I	PWC	-	-	16	8	100	-	100
B32131	Technical Seminar	SEM	-	-	4	2	100	-	100
TOTAL			6	-	20	16	260	140	400

II M.Tech II Semester									
Course Code	Course Title	Category	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
B32132	Dissertation Phase-II	PWC	-	-	32	16	50	150	200
TOTAL			-	-	32	16	50	150	200

PROFESSIONAL ELECTIVES									
PE-I					PE-III				
B32104	Nuclear Engineering				B32106	Air Conditioning System Design			
B32105	Energy Conservation and Management				B32107	Gas Turbines			
PE-II					PE-IV				
B32112	Refrigeration and Cryogenics				B32114	Modeling of IC Engines			
B32113	Design of Heat Exchangers				B32115	Design of solar and Wind System			
PE-V									
B32119	Waste to Energy								
B32120	Advanced Composite Materials								

OPEN ELECTIVES									
B32121	Industrial Safety								
B32122	Advanced Mathematical Methods in Engineering								
B32123	Operations Research								
B32124	Business Analytics								

AUDIT COURSE I					AUDIT COURSE II				
B3AC01	English for Research Paper Writing				B3AC03	Disaster Management			
B3AC02	Research Methodology and IPR				B3AC04	Constitution of India			

CAD/CAM

I M.Tech I Semester									
Course Code	Course Title	Category	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
B30401	Advanced CAD	PCC	3	-	-	3	30	70	100
B30402	Advanced Finite Element Analysis	PCC	3	-	-	3	30	70	100
B30403	Advanced Composite Materials	PCC	3	-	-	3	30	70	100
	Professional Elective Course-I	PEC	3	-	-	3	30	70	100
	Professional Elective Course-II	PEC	3	-	-	3	30	70	100
B30408	Advanced CAD Lab	PCC	-	-	3	1.5	30	70	100
B30409	Advanced Composite Materials Lab	PCC	-	-	3	1.5	30	70	100
	Audit Course-I	MC	2	-	-	0	30	70	100
TOTAL			17	-	8	18	240	560	800

I M.Tech II Semester									
Course Code	Course Title	Category	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
B30410	Advanced CAM	PCC	3	-	-	3	30	70	100
B30411	Computational Fluid Dynamics	PCC	3	-	-	3	30	70	100
B30412	Rapid Prototyping	PCC	3	-	-	3	30	70	100
	Professional Elective Course-III	PEC	3	-	-	3	30	70	100
	Professional Elective Course-IV	PEC	3	-	-	3	30	70	100
B30417	Advanced CAM Lab	PCC	-	-	3	1.5	30	70	100
B30418	Computational Fluid Dynamics Lab	PCC	-	-	3	1.5	30	70	100
	Audit Course-II	MC	2	-	-	0	30	70	100
TOTAL			14	-	12	18	240	560	800

II M.Tech I Semester									
Course Code	Course Title	Category	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
	Professional Elective Course-V	PEC	3	-	-	3	30	70	100
	Open Elective Course	OEC	3	-	-	3	30	70	100
B30430	Dissertation Phase-I	PWC	-	-	16	8	100	-	100
B30431	Technical Seminar	SEM	-	-	4	2	100	-	100
TOTAL			6	-	20	16	260	140	400

II M.Tech II Semester									
Course Code	Course Title	Category	Hours per Week			Credits	Scheme of Examination Maximum Marks		
			L	T	P		Internal (CIE)	External (SEE)	Total
B30432	Dissertation Phase-II	PWC	-	-	32	16	50	150	200
TOTAL			-	-	32	16	50	150	200

PROFESSIONAL ELECTIVES			
PE-I		PE-III	
B30404	Precision Engineering	B30406	Design for Manufacturing and Assembly
B30405	Advanced Mechanics of Solids	B30407	Stress Analysis and vibrations
PE-II		PE-IV	
B30413	Flexible Manufacturing Systems	B30415	Design of Hydraulics and Pneumatics
B30414	Industrial Robotics	B30416	Computer Aided Process Planning
PE-V			
B30419	Automation in Manufacturing		
B30420	Intelligent Manufacturing Systems		

OPEN ELECTIVES	
B30421	Industrial Safety
B30422	Advanced Mathematical Methods in Engineering
B30423	Operations Research
B30424	Business Analytics

AUDIT COURSE I		AUDIT COURSE II	
B3AC01	English for Research Paper Writing	B3AC03	Disaster Management
B3AC02	Research Methodology and IPR	B3AC04	Constitution of India