

UNIVERSITY OF DELHI

No. CNC-II/093/2017-18/126
26th July/16th Aug, 2017

NOTIFICATION Sub: Amendments to Ordinances

In continuation to this office Notification No. CNC-II/093/2017-18/49 dated 08th May, 2017, the following Amendments to Ordinances and Appendices to the Ordinances of the University passed by the Executive Council at its meeting held on 28th Feb, 2017/07th March, 2017, are notified for information of all concerned:

38. Amendments to Appendix II to Ordinance V(2) & VII and to all other relevant Ordinances of the University regarding revision/introduction of the following M.Tech courses under Choice Based Credit System for the students admitted from the academic session 2016-17 (E.C. 28.02.2017/07.03.2017):

Existing Courses (Revised Syllabus)

- (1) **Signal Processing**
- (2) **Process Control**
- (3) **Information System**

New Courses

- (4) **Embedded System and VLSI**
- (5) **Industrial Electronics**
- (6) **Mechatronics**
- (7) **Biochemical Engineering**
- (8) **CAD/CAM**
- (9) **Manufacturing Process and Automation Engineering**
- (10) **Production Engineering**
- (11) **Engineering Management**
- (12) **Nano-Technology**

SCHEME OF COURSE

TYPES OF COURSES

Courses are the subjects that comprise the M.Tech programme.

1. A course may be designed to comprise lectures, tutorials, laboratory work, field work, outreach activities, project work, vocational training, viva, seminars, term papers, assignments, presentations, self-study etc. or a combination of some of these components.
2. The learning objectives and learning outcomes of each course will be defined before the start of a semester.
3. Courses are of two kinds: Core and Elective.
 - i. **Core Course (CC):** This is a course which is to be compulsorily studied by a student as a core requirement to complete the requirement of M.Tech course.
 - ii. **Elective Course:** An elective course is a course which can be chosen from a pool of subjects. It is intended to support the discipline of study by providing an expanded scope, enabling exposure to

another discipline/domain and nurturing a student's proficiency/skill. An elective may be of following types:

- a) **Discipline Centric Elective (ED):** It is an elective course that adds proficiency to the students in the discipline.
 - b) **Open Elective (EO):** It is an elective course taken from other engineering disciplines that broadens the perspective of an Engineering student.
4. Each course contributes certain credits to the programme. A course can be offered either as a full course (4 credits) or as a half course (2 credits). A full course is conducted with 3 hours of lectures and either 1 hour of tutorial or 2 hours of practical work per week. A half course is conducted with 2 hours of lectures.
 5. A student of Postgraduate programme has to accumulate about 40% credits from the Core the remaining credits from the Elective Courses to become eligible for the award of degree/ diploma/ certificate programmes.
 6. A course (full/half) may also be designed without lectures or tutorials. However, such courses may comprise Field work, Outreach activities, Project work, Vocational Training, Seminars, Self-study etc. or a combination of some of these.
 7. A Project work/Dissertation is considered as a special course involving application of the knowledge gained during the course of study in exploring, analyzing and solving complex problems in real life applications. A candidate completes such a course on his own with an advisory support by a teacher/faculty member.

Examination and Assessment

The following system will be implemented in awarding grades and CGPA under the CBCS system.

1. **Letter Grades and Grade Points:** A 10-point grading system shall be used with the letter grades as given in Table 1 below:

Table1: Grades and Grade Points

Letter Grade	Grade point
O (Outstanding)	10
A+ (Excellent)	9
A (Very Good)	8
B+ (Good)	7
B (Above average)	6
C (Average)	5
P (Pass)	4
F (Fail)	0
Ab (absent)	0

2. **Fail grade:** A student obtaining Grade F shall be considered failed and will be required to reappear in the examination. If the student does not want to reappear in an elective subject (that is ED, EO *but not CC courses*) then he/she can re-register afresh for a new elective subject.
3. **Non-credit course:** 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. However, a student must get satisfactory to get the degree.
4. **Fairness in Assessment:** The CBCS promotes continuous evaluation system where end semester examinations weightage should not be more than 60%. The Departments should design their own methods for continuous evaluation. They have the flexibility and freedom in designing the examination and evaluation methods that best fits the curriculum, syllabi & teaching, learning methods. In this regard, the checks and balances be implemented which enable Departments would effectively and fairly carry out the process of assessment and examination.

5. Computation of SGPA and CGPA: The following procedure be used to compute the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA):

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

$$SGPA(S_i) = \frac{\sum C_j \times G_j}{\sum C_j}$$

Where C_i is the number of credits of the i^{th} course and G_i is the grade points scored by the student in the i^{th} course.

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

$$CGPA = \frac{\sum C_i \times SGPA(S_i)}{\sum C_i}$$

Where S_i is the SGPA of the i^{th} semester and C_i is the total number of credits in that semester.

- iii. The SGPA and CGPA shall be rounded off to two decimal points and reported in the transcripts.
- iv. CGPA shall be converted into percentage of marks, if required by multiplying CGPA with 10.

PROGRAMME STRUCTURE

1. The M.Tech programme spans 4 semesters, normally completed in 2 years.
2. The courses offered in each semester are given in the Semester-wise Course Allocation.
3. The discipline centric subjects under CC and ED categories are listed for each discipline separately.
4. A course may have pre-requisite courses that are given in the Semester-wise Course Allocation. A student can opt for an elective only if he/she has fulfilled its pre-requisites.
5. A student has to register for all electives before the start of a semester.

COURSE CODIFICATION

The codes for various Postgraduate Programme are as follows:

- i. Department of Electronics and Communication Engineering:
 1. Signal Processing-ECSP
 2. Embedded System and VLSI-ECES
- ii. Department of Computer Engineering:
 1. Information System-COIS
- iii. Department of Instrumentation and Control Engineering:
 1. Process Control-ICPC
 2. Industrial Electronics-ICIE
 3. Mechatronics-ICMT
- iv. Department of Biotechnology:
 1. Biochemical Engineering -BTBC
 2. Bioinformatics-BTBF
- v. Manufacturing processes and Automation Engineering:
 1. CAD CAM-MACD
 2. Manufacturing process and Automation Engineering.-MAMP
 3. Production Engineering-MAPE
 4. Engineering Management- MAEM
 5. Nano Technology- MANT

The codes for Departmental core subjects and Domain-specific Electives are specific to each Discipline. The first two characters are derived from Departmental codes listed above.

EVALUATION SCHEME

The courses are evaluated on the basis of continuous assessments, mid-semester exams and end-semester exams. The weightage of each of these modes of evaluation for the different types of courses are as follows.

Type of Course	Continuous Assessment (CA), Theory	Mid Semester Exam (MS), Theory	End-semester Exam (ES), Theory	Continuous Assessment (CA), Lab	End-semester Exam (ES), Lab
CC/ED/EO Theory with/without Tutorial	25	25	50	Nil	Nil
CC/ED/EO Theory with Practical	15	15	40	15	15
Major Project and Dissertation	Nil	Nil	Nil	40	60
Online Self Learning Course*	50	Nil	50	Nil	Nil

* If applicable.

EVALUATION AND REVIEW COMMITTEE

The Committee of Courses and Studies in each department shall appoint one or more Evaluation-cum-Review Committees (ERC), each committee dealing with one course or a group of courses. This ERC consists of all faculty members who are likely to teach such courses in the group. Normally Head of the department shall be ERC Chairman.

The ERC has the following functions-

- (i) To recommend appointment of paper setters/examiners of various examinations at the start of each semester.
- (ii) To prepare quizzes, assignments, test papers etc. for Continuous Assessment (CA), Mid-Semester examination (MS) and End Semester (ES) examination and to evaluate them. Normally, each concerned faculty member, who is also a member of ERC, will do this job for his/her class. However, in exceptional circumstances any part of the work may be entrusted to some other member of the ERC.
- (iii) To consider the individual representation of students about evaluation and take remedial action if needed. After scrutinizing, ERC may alter the grades awarded upward/downward. The decision of the ERC shall be final.
- (iv) To moderate assignments, quizzes etc. for courses given by each of the concerned faculty members for his/her class with a view to maintain uniformity of standards.
- (v) To review and moderate the MS and ES results of each course with a view to maintain uniformity of standards.
- (vi) To lay guidelines for teaching a course.

ATTENDANCE, PROMOTION AND DETENTION RULES

1. A student should normally attend all the classes. However, a student will be allowed to appear in the examination if he/ she has put in a minimum of 75% attendance separately in each course for which he / she has registered. A relaxation up to a maximum of 25% may be given on the production of satisfactory evidence that (a) the student was busy in authorized activities, (b) the student was ill.

2. A student should submit the evidence to the fact 1(a) and / or 1(b) above within seven working days of resuming the studies. Certificates submitted later will not be considered.
3. No relaxation in attendance beyond 25% is permitted in any case.
4. A student may re-register for a course if he/ she want to avoid a decrement in the grades.
5. There shall be no supplementary examinations. A student who has failed in a course will have to re-register for the course in a subsequent year.
6. If the student does not want to reappear in an elective course (that is, ED, EO, but not CC courses) then he/she can re-register afresh for a new elective course.

DECLARATION OF RESULTS

1. The M.Tech programme consists of 82 credits. A student will be awarded the degree if he/she has earned all 82 credits.
2. CGPA will be calculated on the basis of the best 78 credits earned by the student.
3. The candidate seeking re-evaluation of a course shall apply for the same on a prescribed proforma along with the evaluation fee prescribed by the university from time to time only for the End Semester Examination within seven days from the date of declaration of result.
4. The Institution/University may cancel the registration of all the courses in a given semester if
 - i. The student has not cleared the dues to the institution/hostel.
 - ii. A punishment is awarded leading to cancellation of the student's registration.

CURRICULUM MODIFICATION

The curriculum will be updated regularly within a period of 5 to 10 years since last revision, to keep pace with the advancements.

CENTRAL ADVISORY COMMITTEE

There shall be a Central Advisory Committee consisting of the following—

- a) Dean, Faculty of Technology, Chairman
- b) Dean PGS
- c) Head of Institution
- d) Heads of Departments running M Tech Courses.

LIST OF OPEN ELECTIVES FOR M.TECH COURSE:

LTP Allocation			Evaluation Scheme				
			Theory			Practical	
L	T	P	CA	MS	ES	CA	MS
3	1	0	25	25	50	-	-
Code	Name of Elective		Pre-Requisites				
EO001	Technical Communication		None				
EO002	Disaster Management		None				
EO003	Basics of Finance Management		None				
EO004	Basics of Human Resources Management		None				
EO005	Project Management		None				
EO006	Basics of Corporate Law		None				
EO007	Biological computing		None				
EO008	Basic of Social Science/Sociology*		None				
EO009	Entrepreneurship		None				
EO010	Social work		None				
EO011	IP and Patenting		None				
EO012	Supply Chain Management-Planning and logistics		None				
EO013	Organization Development		None				
EO014	Industrial Organisation and Managerial Economics		None				

EO015	Global Strategy and Technology	None
EO016	Engineering System Analysis and Design	None
EO017	Biology for Engineers	None
EO018	Energy, Environment and Society	None
EO019	Public Policy and Governance	None

*if applicable

M.TECH (SIGNAL PROCESSING) (FULL TIME)

Semester-Wise Course Allocation SEMESTER I

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
SPC01	CC	Linear Algebra for Signal Processing	3	0	2	4	15	15	40	15	15	100
SPC02	CC	Digital Signal Processing	3	0	2	4	15	15	40	15	15	100
SPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
SPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
SPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EO***	EO	Open Elective #	3	1	0	4	25	25	50	-	-	100
		Total	-	-	-	24						
			\$									

The LTP allocation, Evaluation scheme and pre- requisites for Electives are given in Table 2-3. The course code will depend upon student's choice of elective(s).
\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER II

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
SPC03	CC	Advanced Digital Signal Processing	3	0	2	4	15	15	40	15	15	100
SPC04	CC	Adaptive Signal Processing	3	0	2	4	15	15	40	15	15	100
SPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
SPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
SPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EO***	EO	Open Elective #	3	1	0	4	25	25	50	-	-	100
		Total	-	-	-	24						
			\$									

The LTP allocation, Evaluation scheme and pre- requisites for Electives are given in Table 2-3. The course code will depend upon student's choice of elective(s).
\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER III

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)						
							Theory			Practical		Total	
							CA	MS	ES	CA	ES		
SPC05	CC	Seminar	-	-	-	2	100	-	-	-	-	-	100
SPC06	CC	Major Project	-	-	-	6	-	-	-	40	60	-	100
SPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	-	100
SPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	-	100
SPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	-	100
		Total	-	-	-	20							

The LTP allocation, Evaluation scheme and pre-requisites for Electives are given in Table 2-3. The course code will depend upon student's choice of elective(s).
 \$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER IV

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)						
							Theory			Practical		Total	
							CA	MS	ES	CA	ES		
SPC07	CC	Dissertation	-	-	-	14	-	-	-	40	60	-	100
		Total	-	-	-	14							

M.TECH. (SIGNAL PROCESSING) (PART TIME)

Semester-Wise Course Allocation SEMESTER I

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)						
							Theory			Practical		Total	
							CA	MS	ES	CA	ES		
SPC01	CC	Linear Algebra for Signal Processing	3	0	2	4	15	15	40	15	15	-	100
SPC02	CC	Digital Signal Processing	3	0	2	4	15	15	40	15	15	-	100
EO***	EO	Open Elective #	3	1	0	4	25	25	50	-	-	-	100
		Total	9	1	4	12							

SEMESTER II

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
SPC03	CC	Advanced Digital Signal Processing	3	0	2	4	15	15	40	15	15	100
SPC04	CC	Adaptive Signal Processing	3	0	2	4	15	15	40	15	15	100
EO***	EO	Open Elective #	3	1	0	4	25	25	50	-	-	100
		Total	9	1	4	12						

SEMESTER III

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
SPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
SPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
SPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL	-	-	-	12						
			\$									

The LTP allocation, Evaluation scheme and pre-requisites for Electives are given in Table 2-3. The course code will depend upon student's choice of elective(s).

\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER IV

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
SPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
SPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
SPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL	-	-	-	12						
			\$									

The LTP allocation, Evaluation scheme and pre-requisites for Electives are given in Table 2-3. The course code will depend upon student's choice of elective(s).

\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER V

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)						
							Theory			Practical		Total	
							CA	MS	ES	CA	ES		
SPC06	CC	Major Project	-	-	-	6	-	-	-	40	60	100	
SPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100	
SPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100	
		TOTAL	-	-	-	14							
			\$										

The LTP allocation, Evaluation scheme and pre- requisites for Electives are given in Table 2-3. The course code will depend upon student's choice of elective(s).
 \$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER VI

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)						
							Theory			Practical		Total	
							CA	MS	ES	CA	ES		
SPC05	CC	Seminar	-	-	-	2	-	-	-	-	-	100	
SPC07	CC	Dissertation	-	-	-	14	-	-	-	40	60	100	
SPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100	
		TOTAL	-	-	-	20							
			\$										

\$ The actual weekly load will depend upon the elective(s) chosen by the student.

TABLE 2: LIST OF DISCIPLINE CENTRIC ELECTIVES

CODE	COURSE OF STUDY	PREREQUISITE	L	T	P	C
SPD01	Probability Theory and Stochastic Process	---	3	1/0	0/2	4
SPD02	Digital Communication	---	3	1/0	0/2	4
SPD03	Analog IC for Signal Processing	---	3	1/0	0/2	4
SPD04	Digital System Design	---	3	1/0	0/2	4
SPD05	Theory of Error Control Coding	---	3	1/0	0/2	4
SPD06	Optical Signal Processing	---	3	1/0	0/2	4
SPD07	BIMOS Analog Integrated Circuits	---	3	1/0	0/2	4
SPD08	RF and Microwave Signal Processing	---	3	1/0	0/2	4
SPD09	Detection and Estimation Theory	SPC01	3	1/0	0/2	4
SPD10	Speech Processing	SPC02	3	1/0	0/2	4
SPD11	Digital Image Processing	SPC02	3	1/0	0/2	4
SPD12	Array Signal Processing	SPC01	3	1/0	0/2	4
SPD13	Multirate and Wavelets	SPC02	3	1/0	0/2	4
SPD14	DSP Algorithm and Architecture	SPC02	3	1/0	0/2	4

SPD15	Wireless Communication	SPD02	3	1/0	0/2	4
SPD16	Current Mode Techniques for Signal Processing	---	3	1/0	0/2	4
SPD17	Optimization Techniques	---	3	1/0	0/2	4
SPD18	Selected Topics in Signal Processing	---	3	1/0	0/2	4
SPD19	Signal Processing Techniques for Wireless Communication	SPC03, SPD15	3	1/0	0/2	4
SPD20	Radar and Sonar Signal Processing	SPC03	3	1/0	0/2	4
SPD21	Signal Compression Techniques	SPC03, SPD13	3	1/0	0/2	4
SPD22	Network Security and Cryptography	---	3	1/0	0/2	4
SPD23	VLSI Signal Processing	SPC02, SPC03	3	1/0	0/2	4
SPD24	Pattern Recognition	SPC01	3	1/0	0/2	4
SPD25	Digital Video Processing	SPD11	3	1/0	0/2	4

**M.TECH (PROCESS CONTROL)
(FULL TIME)**

**Semester-Wise Course Allocation
SEMESTER I**

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
PCC01	CC	Modern Control Theory	3	0	2	4	15	15	40	15	15	100
PCC02	CC	Introduction to Process Control	3	0	2	4	15	15	40	15	15	100
PCD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
PCD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
PCD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EO***	EO	Open Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL	18	3	6	24						
				\$								

#- The LTP allocation, Evaluation scheme and pre-requisites for Electives are given in tables 3-4. The course code will depend upon student's choice of elective (s).

\$- the actual weekly load will depend upon the electives chosen by the students.

SEMESTER II

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
PCC03	CC	Advanced Process Control	3	0	2	4	15	15	40	15	15	100
PCC04	CC	Discrete time Control System	3	0	2	4	15	15	40	15	15	100
PCD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100

PCD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
PCD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EO**	EO	Open Elective #	-	-	-	4	-	-	-	-	-	100
	TYPE	TOTAL	18	3	6	24						
			\$									

#- The LTP allocation, Evaluation scheme and pre-requisites for Electives are given in tables 3-4. The course code will depend upon student's choice of elective (s).
 \$- the actual weekly load will depend upon the electives chosen by the students.

SEMESTER III

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
PCD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
PCD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
PCD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
PCC05	CC	Seminar	0	0	4	2	100	-	-	-	-	100
PCC06	CC	Major Project	0	0	-	6	-	-	-	40	60	100
		TOTAL	6	1	-	20						
			\$									

#- The LTP allocation, Evaluation scheme and pre-requisites for Electives are given in tables 3-4. The course code will depend upon student's choice of elective (s).
 \$- the actual weekly load will depend upon the electives chosen by the students.

SEMESTER IV

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
PCC07	CC	Dissertation	0	0	-	14	-	-	-	40	60	100
		TOTAL	0	0	-	14						
			\$									

\$- the actual weekly load will depend upon the electives chosen by the students.

M.TECH (PROCESS CONTROL) (PART TIME)

Semester-Wise Course Allocation SEMESTER I

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
PCC01	CC	Modern Control Theory	3	0	2	4	15	15	40	15	15	100
PCC02	CC	Introduction to Process Control	3	0	2	4	15	15	40	15	15	100

EO***	EO	Open Elective #	-	-	-	4	-	-	-	-	-	100	
		TOTAL	9	1	4	12							
			\$										

#- The LTP allocation, Evaluation scheme and pre-requisites for Electives are given in tables 3-4. The course code will depend upon student's choice of elective (s).

\$- the actual weekly load will depend upon the electives chosen by the students.

SEMESTER II

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Wightage)					Total	
							Theory			Practical			
							CA	MS	ES	Int	Ext		
PCC03	CC	Advanced Process Control	3	0	2	4	15	15	40	15	15	100	
PCC04	CC	Discrete time Control System	3	0	2	4	15	15	40	15	15	100	
EO***	EO	Open Elective #	-	-	-	4	-	-	-	-	-	100	
		TOTAL	9	1	4	12							
			\$										

#- The LTP allocation, Evaluation scheme and pre-requisites for Electives are given in tables 3-4. The course code will depend upon student's choice of elective (s).

\$- the actual weekly load will depend upon the electives chosen by the students.

SEMESTER III

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Wightage)					Total	
							Theory			Practical			
							CA	MS	ES	Int	Ext		
PCD**	ED	Elective #	-	-	-	-	-	-	-	-	-	100	
PCD**	ED	Elective #	-	-	-	-	-	-	-	-	-	100	
PCD**	ED	Elective #	-	-	-	-	-	-	-	-	-	100	
		TOTAL	9	2	2	12							
			\$										

#- The LTP allocation, Evaluation scheme and pre-requisites for Electives are given in tables 3-4. The course code will depend upon student's choice of elective (s).

\$- the actual weekly load will depend upon the electives chosen by the students.

SEMESTER IV

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Wightage)					Total	
							Theory			Practical			
							CA	MS	ES	Int	Ext		
PCD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100	
PCD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100	
PCD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100	
		TOTAL	9	2	2	12							
			\$										

#- The LTP allocation, Evaluation scheme and pre-requisites for Electives are given in tables 3-4. The course code will depend upon student's choice of elective (s).

\$- the actual weekly load will depend upon the electives chosen by the students

SEMESTER V

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Wightage)						
							Theory			Practical		Total	
							CA	MS	ES	Int	Ext		
PCD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100	
PCD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100	
PCC05	CC	Major Project	0	0	-	6				40	60	100	
		TOTAL	6	1	2	14							
			\$										

#- The LTP allocation, Evaluation scheme and pre-requisites for Electives are given in tables 3-4. The course code will depend upon student's choice of elective (s).
 \$- the actual weekly load will depend upon the electives chosen by the students

SEMESTER VI

CODE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Wightage)							
						Theory			Practical		Total		
						CA	MS	ES	Int	Ext			
PCD**	Elective #	-	-	-	4	-	-	-	-	-	-	100	
PCC06	Seminar	0	0	4	2	100	-	-	-	-	-	100	
PCC07	Dissertation	0	0	-	14	-	-	-	40	60	100		
	TOTAL	0	0	4	20								
		\$											

#- The LTP allocation, Evaluation scheme and pre-requisites for Electives are given in tables 3-4. The course code will depend upon student's choice of elective (s).
 \$- the actual weekly load will depend upon the electives chosen by the students

TABLE.3- LIST OF DISIPLINE CENTRIC ELECTIVE

CODE	COUSRE OF STUDY	PREREQUISITE	L	T	P	C
PCD01	Power Electronics	---	3	1/0	0/2	4
PCD02	Intelligent Instrumentation	---	3	1/0	0/2	4
PCD03	Random Process	---	3	1/0	0/2	4
PCD04	Fault diagnostics	---	3	1/0	0/2	4
PCD05	Parameter estimation and system identification	---	3	1/0	0/2	4
PCD06	Model predictive control	---	3	1/0	0/2	4
PCD07	Intelligent control	---	3	1/0	0/2	4
PCD08	Optimization techniques	---	3	1/0	0/2	4
PCD09	Robotics	Electrical Machines/Sensors	3	1/0	0/2	4
PCD10	Distributed Digital Control System	Discrete Time Control system	3	1/0	0/2	4
PCD11	Optimal control	----	3	1/0	0/2	4
PCD12	Advanced digital signal processing	Signals and Systems/DSP	3	1/0	0/2	4
PCD13	Robust control	Control System	3	1/0	0/2	4
PCD14	Electric drives and control	Power Electronics	3	1/0	0/2	4
PCD15	Microcontrollers based system design	Microprocessor	3	1/0	0/2	4
PCD16	Microprocessor based system design	Microprocessor	3	1/0	0/2	4
PCD17	Application of FPGA in process control	Process Control	3	1/0	0/2	4

PCD18	MEMS and NEMS	Transducer and Components	3	1/0	0/2	4
PCD19	Multi sensor data fusion	Transducer and sensor	3	1/0	0/2	4
PCD20	Industrial data communication	---	3	1/0	0/2	4
PCD21	RDBMS	---	3	1/0	0/2	4
PCD22	Advances in artificial intelligence	---	3	1/0	0/2	4
PCD23	Soft Computing	---	3	1/0	0/2	4
PCD24	Process Dynamics and Control	Process Control	3	1/0	0/2	4
PCD25	Machine dynamics and control	Electrical Machines	3	1/0	0/2	4
PCD26	Selected topics in instrumentation and Control	---	3	1/0	0/2	4
PCD27	Advanced PID controller	Control System	3	1/0	0/2	4

**M.TECH (INFORMATION SYSTEM)
(FULL TIME)
Semester-Wise Course Allocation
SEMESTER I**

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
ISC01	CC	Behaviour Oriented Conceptual Modeling	3	0	2	4	15	15	40	15	15	100
ISC02	CC	Distributed Computing	3	0	2	4	15	15	40	15	15	100
ISD**	ED	Elective [#]	3	0	2	4	-	-	-	-	-	100
ISD**	ED	Elective [#]	3	1	0	4	-	-	-	-	-	100
ISD**	ED	Elective [#]	3	1	0	4	-	-	-	-	-	100
EO***	EO	Open Elective	3	1	0	4	-	-	-	-	-	100
		TOTAL	18	3	6	24						
				\$								

#: The LTP allocation evaluation scheme and pre-requisites for electives are given in Tables 3-4.

The course code will depend upon student's choice of electives.

\$: The actual weekly load will depend upon the electives chosen by the student.

SEMESTER II

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
ISC03	CC	Software Testing	3	0	2	4	15	15	40	15	15	100
ISC04	CC	Advances in Computer Architecture	3	0	2	4	15	15	40	15	15	100
ISD**	ED	Elective [#]	3	0	2	4	-	-	-	-	-	100
ISD**	ED	Elective [#]	3	1	0	4	-	-	-	-	-	100
ISD**	ED	Elective [#]	3	1	0	4	-	-	-	-	-	100
EO***	EO	Open Elective	3	1	0	4	-	-	-	-	-	100
		TOTAL	18	3	6	24						
				\$								

#: The LTP allocation, evaluation scheme and Pre-requisites for electives are given in Tables 3-4.

The course code will depend upon student's choice of electives.

\$: The actual weekly load will depend upon the electives chosen by the student.

SEMESTER III

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
ISD**	ED	Elective [#]	3	0	2	4	-	-	-	-	-	100
ISD**	ED	Elective [#]	3	1	0	4	-	-	-	-	-	100
ISD**	ED	Elective [#]	3	1	0	4	50	-	50	-	-	100
ISC05	CC	Seminar	0	0	4	2	100	-	-	-	-	100
ISC06	CC	Major Project	0	0	-	6	-	-	-	40	60	100
		TOTAL	6	1	-	20						
						\$						

#: The LTP allocation evaluation scheme and Pre-requisites for electives are given in Tables 3-4.
The course code will depend upon student's choice of elective.
\$: The actual weekly load will depend upon the electives chosen by the student.

SEMESTER IV

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
ISC07	CC	Dissertation	0	0	-	14	-	-	-	40	60	100
		TOTAL	-	-	-	14						

M.TECH. (INFORMATION SYSTEMS) (PART TIME)

Semester-Wise Course Allocation SEMESTER I

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
ISC01	CC	Behaviour Oriented Conceptual Modeling	3	0	2	4	15	15	40	15	15	100
ISC02	CC	Distributed Computation	3	0	2	4	15	15	40	15	15	100
EO***	EO	Open Elective	3	1	0	4	-	-	-	-	-	100
		TOTAL	9	1	4	12						
						\$						

#: The actual weekly load will depend upon the electives chosen by the student.

SEMESTER II

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
ISC03	CC	Software Testing	3	0	2	4	15	15	40	15	15	100

ISC04	CC	Advances in Computer Architecture	3	0	2	4	15	15	40	15	15	100
EO***	EO	Open Elective	3	1	0	4	-	-	-	-	-	100
TOTAL			9	1	4	12						
			\$									

\$. The actual weekly load will depend upon the electives chosen by the student.

SEMESTER III

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
ISD**	ED	Elective [#]	3	0	2	4	-	-	-	-	-	100
ISD**	ED	Elective [#]	3	1	0	4	-	-	-	-	-	100
ISD**	ED	Elective [#]	3	1	0	4	-	-	-	-	-	100
TOTAL			9	2	2	12						
			\$									

#. The LTP allocation evaluation scheme and Pre-requisites for electives are given in Tables 3-4

The course code will depend upon student's choice of elective.

\$. The actual weekly load will depend upon the electives chosen by the student.

SEMESTER IV

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
ISD**	ED	Elective [#]	3	0	2	4	-	-	-	-	-	100
ISD**	ED	Elective [#]	3	1	0	4	-	-	-	-	-	100
ISD**	ED	Elective [#]	3	1	0	4	-	-	-	-	-	100
TOTAL			9	2	2	12						
			\$									

#. The LTP allocation evaluation scheme and pre-requisites for electives are given in Tables 3-4 The course code will depend upon student's choice of elective.

\$. The actual weekly load will depend upon the electives chosen by the student.

SEMESTER V

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
ISD**	ED	Elective [#]	3	0	2	4	-	-	-	-	-	100
ISD**	ED	Elective [#]	3	1	0	4	-	-	-	-	-	100
ISC06	CC	Major Project	0	0	-	6	-	-	-	40	60	100
TOTAL			6	1	-	16						
			\$									

#. The LTP allocation evaluation scheme and pre-requisites for electives are given in Tables 3-4

The course code will depend upon student's choice of elective.

\$. The actual weekly load will depend upon the electives chosen by the student.

SEMESTER VI

CODE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
						Theory			Practical		Total
						CA	MS	ES	Int	Ext	
ISD**	Self-Learning Course [#]	3	1	0	4	50	-	50	-	-	100
ISC05	Seminar	0	0	4	2	100	-	-	-	-	100
ISC07	Dissertation	0	0	-	14	-	-	-	40	60	100
	TOTAL	0	0	-	18						
				\$							

#: The LTP allocation evaluation scheme and Pre-requisites for electives are given in Tables 3-4
The course code will depend upon student's choice of elective.
\$: The actual weekly load will depend upon the electives chosen by the student.

TABLE 3: LIST OF DISCIPLINE CENTRIC ELECTIVES

(A) WITH PRACTICALS					
CODE	COUSRE OF STUDY	L	T	P	C
ISD**		3	0	2	4
ISD01	Machine Learning	3	0	2	4
ISD02	Computer Vision	3	0	2	4
ISD03	Semantic Web	3	0	2	4
ISD04	Digital Watermarking and Steganography	3	0	2	4
ISD05	Soft Computing	3	0	2	4
ISD06	Advances in Software Engineering	3	0	2	4
ISD07	Digital Image Processing	3	0	2	4
ISD08	Advances in Mobile Computing	3	0	2	4
ISD09	Information Security	3	0	2	4
(B) WITH TUTORIALS					
CODE	COUSRE OF STUDY	L	T	P	C
ISD10	Software Quality	3	1	0	4
ISD11	Service Oriented Architecture	3	1	0	4
ISD12	Information Theory and Coding	3	1	0	4
ISD13	Digital Forensic	3	1	0	4
ISD14	IT Law and Ethics	3	1	0	4
ISD15	Design and Architectural Patterns	3	1	0	4
ISD16	Emerging Trends in Computational Intelligence	3	1	0	4
ISD17	Emerging Trends in Information Systems	3	1	0	4
ISD18	Embedded Systems	3	1	0	4
ISD19	Information Storage and Retrieval	3	1	0	4
ISD20	Advances in Databases	3	1	0	4
ISD21	Internet of Things	3	1	0	4
ISD22	Requirement Engineering	3	1	0	4
ISD23	Real-time Systems	3	1	0	4
ISD24	Human Computer Interface	3	1	0	4
ISD25	Rule Based Computing	3	1	0	4
ISD26	Cloud Computing	3	1	0	4
ISD27	Big Data and Analytics	3	1	0	4
ISD28	Advances in Compiler Technology	3	1	0	4

**M.TECH (EMBEDDED SYSTEM AND VLSI)
(FULL TIME)**

**Semester-Wise Course Allocation
SEMESTER I**

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					Total
							Theory			Practical		
							CA	MS	ES	CA	ES	
ESC01	CC	CMOS Analog Circuit Design	3	0	2	4	15	15	40	15	15	100
ESC02	CC	Microcontrollers for Embedded System Design	3	0	2	4	15	15	40	15	15	100
ESD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
ESD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
ESD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EO***	EO	Open Elective #	3	1	0	4	25	25	50	-	-	100
		TOTAL	-	-	-	24						
						\$						

The LTP allocation, Evaluation scheme and pre- requisites for Electives are given in Table 2-3. The course code will depend upon student's choice of elective(s).

\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER II

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					Total
							Theory			Practical		
							CA	MS	ES	CA	ES	
ESC03	CC	Integrated Circuits for Analog Signal Processing	3	0	2	4	15	15	40	15	15	100
ESC04	CC	Processor Design	3	0	2	4	15	15	40	15	15	100
ESD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
ESD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
ESD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EO***	EO	Open Elective #	3	1	0	4	25	25	50	-	-	100
		TOTAL	-	-	-	24						
						\$						

The LTP allocation, Evaluation scheme and pre- requisites for Electives are given in Table 2-3. The course code will depend upon student's choice of elective(s).

\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER III

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					Total
							Theory			Practical		
							CA	MS	ES	CA	ES	
ESC05	CC	Seminar	-	-	-	2	100	-	-	-	-	100
ESC06	CC	Major Project	-	-	-	6				40	60	100

ESD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
ESD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
ESD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
		TOTAL	-	-	-	20						
			\$									

The LTP allocation, Evaluation scheme and pre- requisites for Electives are given in Table 2-3. The course code will depend upon student's choice of elective(s).
\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER IV

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
ESC07	CC	Dissertation	-	-	-	14	-	-	-	40	60	100
		TOTAL	-	-	-	14						

M.TECH (EMBEDDED SYSTEM AND VLSI) (PART TIME)

Semester-Wise Course Allocation SEMESTER I

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
ESC01	CC	CMOS Analog Circuit Design	3	0	2	4	15	15	40	15	15	100
ESC02	CC	Microcontrollers for Embedded System Design	3	0	2	4	15	15	40	15	15	100
EO***	EO	Open Elective #	3	1	0	4	25	25	50	-	-	100
		TOTAL	9	1	4	12						

SEMESTER II

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
ESC03	CC	Integrated Circuits for Analog Signal Processing	3	0	2	4	15	15	40	15	15	100
ESC04	CC	Processor Design	3	0	2	4	15	15	40	15	15	100
EO***	EO	Open Elective #	3	1	0	4	25	25	50	-	-	100
		TOTAL	9	1	4	12						

SEMESTER III

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
ESD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
ESD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
ESD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL	-	-	-	12						
			\$									

The LTP allocation, Evaluation scheme and pre-requisites for Electives are given in Table 2-3. The course code will depend upon student's choice of elective(s).

\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER IV

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
ESD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
ESD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
ESD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL	-	-	-	12						
			\$									

The LTP allocation, Evaluation scheme and pre-requisites for Electives are given in Table 2-3

. The course code will depend upon student's choice of elective(s).

\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER V

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
ESC06	CC	Major Project	-	-	-	6				40	60	100
ESD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
ESD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL	-	-	-	14						
			\$									

The LTP allocation, Evaluation scheme and pre-requisites for Electives are given in Table 2-3. The course code will depend upon student's choice of elective(s).

\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER VI

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
ESC05	CC	Seminar	-	-	-	2	100	-	-	-	-	100

ESC07	CC	Dissertation	-	-	-	14	-	-	-	40	60	100
ESD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL	-	-	-	20						
						\$						

\$ The actual weekly load will depend upon the elective(s) chosen by the student.

Table 2: LIST OF DISCIPLINE CENTRIC ELECTIVES

CODE	COURSE OF STUDY	PREREQUISITE	L	T	P	C
ESD01	Embedded System Design	---	3	1/0	0/2	4
ESD02	Embedded Real Time Operating Systems	---	3	1/0	0/2	4
ESD03	Switched-Capacitor and Switched-Current Circuits	---	3	1/0	0/2	4
ESD04	Semiconductor Devices	---	3	1/0	0/2	4
ESD05	Device Modelling and Circuit Simulation	---	3	1/0	0/2	4
ESD06	Digital Integrated Circuits	---	3	1/0	0/2	4
ESD07	Digital System Design using HDLs	---	3	1/0	0/2	4
ESD08	Optimization Techniques	---	3	1/0	0/2	4
ESD09	Embedded Networking	ESD01	3	1/0	0/2	4
ESD10	Sensors and Actuators	---	3	1/0	0/2	4
ESD11	Hardware Software Co-design	ESD01	3	1/0	0/2	4
ESD12	Modern Analog Filter Design	ESC01	3	1/0	0/2	4
ESD13	Deep Sub Micron CMOS ICs	ESD04	3	1/0	0/2	4
ESD14	ASIC Design	ESD07	3	1/0	0/2	4
ESD15	Design of Semiconductor Memories	ESD06	3	1/0	0/2	4
ESD16	Algorithms for VLSI Design Automation	ESD07	3	1/0	0/2	4
ESD17	Low Power VLSI Design	ESD06, ESC01	3	1/0	0/2	4
ESD18	Neural networks in embedded applications	ESC01	3	1/0	0/2	4
ESD19	Internet of Things	ESD09, ESD10	3	1/0	0/2	4
ESD20	Current Mode Techniques for Signal Processing	ESC01	3	1/0	0/2	4
ESD21	System on Chip Design	ESC01, ESD06	3	1/0	0/2	4
ESD22	Scripting Languages for Design Automation	---	3	1/0	0/2	4
ESD23	Optimization of CMOS Integrated Circuits	ESC01, ESD06	3	1/0	0/2	4
ESD24	Soft Computing Techniques	---	3	1/0	0/2	4
ESD25	Mixed Signal IC Design	ESC01, ESD06	3	1/0	0/2	4
ESD26	Design for testability	ESD06	3	1/0	0/2	4

**M.TECH (INDUSTRIAL ELECTRONICS)
(FULL TIME)**

**Semester-Wise Course Allocation
SEMESTER I**

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME					
							Percentage (Weightage)					Total
							Theory			Practical		
CA	MS	ES	Int	Ext								
IEC01	CC	Power Converter	3	0	2	4	15	15	40	15	15	100

IEC02	CC	Industrial Control Electronics	3	0	2	4	15	15	40	15	15	100
IED**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
IED**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
IED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EO**	EO	Open Elective #	3	1	0	4	25	25	50	-	-	100
		TOTAL	18	3	6	24						
			\$									

#. The LTP allocation evaluation scheme and Pre-requisites for electives are given in Tables 3-4
The course code will depend upon student's choice of elective.
\$. The actual weekly load will depend upon the electives chosen by the student.

SEMESTER II

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					Total
							Theory			Practical		
							CA	MS	ES	Int	Ext	
IEC03	CC	Switched Mode Power Converter	3	0	2	4	15	15	40	15	15	100
IEC04	CC	Power Electronic Drives	3	0	2	4	15	15	40	15	15	100
IED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
IED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
IED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EO***	EO	Open Elective #	3	1	0	4	25	25	50	-	-	100
		TOTAL	18	3	6	24						
			\$									

The LTP allocation, Evaluation scheme and pre- requisites for Electives are given in Table 3-4. The course code will depend upon student's choice of elective(s).
\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER III

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					Total
							Theory			Practical		
							CA	MS	ES	Int	Ext	
IED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
IED**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
IED**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
IEC05	CC	Seminar	0	0	4	2	100	-	-	-	-	100
IEC06	CC	Major Project	0	0	-	6				40	60	100
		TOTAL	6	1	-	20						

The LTP allocation, Evaluation scheme and pre- requisites for Electives are given in Table 3-4. The course code will depend upon student's choice of elective(s).
\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER IV

CODE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
						Theory			Practical		Total
						CA	MS	ES	Int.	Ext	
IEC07	Dissertation	0	0	-	14	-	-	-	40	60	100
	TOTAL	0	0	-	14						

The LTP allocation, Evaluation scheme and pre- requisites for Electives are given in Table 3-4. The course code will depend upon student's choice of elective(s).
\$ The actual weekly load will depend upon the elective(s) chosen by the student.

**M.TECH (INDUSTRIAL ELECTRONICS)
(PART TIME)**

**Semester-Wise Course Allocation
SEMESTER I**

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
IEC01	CC	Power Converter	3	0	2	4	15	15	40	15	15	100
IEC02	CC	Industrial Control Electronics	3	0	2	4	15	15	40	15	15	100
EO**	EO	Open Elective I#	3	1	0	4	25	25	50	-	-	100
		TOTAL	9	1	4	12						
				\$								

The LTP allocation, Evaluation scheme and pre- requisites for Electives are given in Table 3-4. The course code will depend upon student's choice of elective(s).
\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER II

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
IEC03	CC	Switched Mode Power Converter	3	0	2	4	15	15	40	15	15	100
IEC04	CC	Power Electronic Drives	3	0	2	4	15	15	40	15	15	100
EO***	EO	Open Elective II#	3	1	0	4	25	25	50	-	-	100
		TOTAL	9	1	4	12						

The LTP allocation, Evaluation scheme and pre- requisites for Electives are given in Table 3-4. The course code will depend upon student's choice of elective(s).
\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER III

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
IED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
IED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
IED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL	-	-	-	12						

The LTP allocation, Evaluation scheme and pre- requisites for Electives are given in Table 3-4. The course code will depend upon student's choice of elective(s).
\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER IV

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
IED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
IED**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
IED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL	9	2	2	12						

The LTP allocation, Evaluation scheme and pre- requisites for Electives are given in Table 3-4. The course code will depend upon student's choice of elective(s).
\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER V

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
IED**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
IED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
IEC05	CC	Major Project	0	0	-	6				40	60	100
		TOTAL	6	1	2	14						

The LTP allocation, Evaluation scheme and pre- requisites for Electives are given in Table 3-4. The course code will depend upon student's choice of elective(s).
\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER VI

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
IED**	ED	Elective	-	-	-	4	-	-	-	-	-	100
IEC06	CC	Seminar	0	0	4	2	100	-	-	-	-	100
IEC07	CC	Dissertation	0	0	-	14	-	-	-	40	60	100
		TOTAL	0	0	4	20						

The LTP allocation, Evaluation scheme and pre- requisites for Electives are given in Table 3-4. The course code will depend upon student's choice of elective(s).
\$ The actual weekly load will depend upon the elective(s) chosen by the student.

TABLE 3: LIST OF DISCIPLINE CENTRIC ELECTIVES

CODE	COURSRE OF STUDY	PREREQUISITE	L	T	P	C
IED01	Optimization Techniques	Undergraduate level mathematics	3	1/0	0/2	4
IED02	Advanced Power System Analysis	Power System analysis	3	1/0	0/2	4
IED03	Flexible AC Transmission Systems	Power System Analysis, Power Conversion techniques	3	1/0	0/2	4
IED04	Electrical Distribution Systems	Transmission and Distribution	3	1/0	0/2	4
IED05	PWM Converters And Applications	---	3	1/0	0/2	4
IED06	Advanced power apparatus	Power Apparatus	3	1/0	0/2	4
IED07	Design of hydropower system	---	3	1/0	0/2	4
IED08	Advanced Power System Protection	short circuit analysis, digital system and signal processing	3	1/0	0/2	4
IED09	High Voltage DC Transmission	Power Electronics, Power System	3	1/0	0/2	4
IED10	Power quality and harmonics	Power Quality	3	1/0	0/2	4
IED11	Advanced Topics in Power Electronics	Power Electronics	3	1/0	0/2	4
IED12	Power apparatus design	Power Apparatus	3	1/0	0/2	4
IED13	Modeling and Analysis of Electrical machines	Power Apparatus	3	1/0	0/2	4
IED14	Renewable Power Generation Technologies	Power Apparatus	3	1/0	0/2	4
IED15	Power System Operation And Control	Power Systems	3	1/0	0/2	4
IED16	Micro Controller Applications in Power converters	Power Electronics and microprocessor	3	1/0	0/2	4
IED17	Smart Grid Technologies	Power Systems	3	1/0	0/2	4
IED18	Electric Systems in Wind Energy	Electric Machines	3	1/0	0/2	4
IED19	Distributed Generation and Micro-grid	Power System	3	1/0	0/2	4
IED20	Microcontroller Applications In Power Converters	Power Electronics	3	1/0	0/2	4
IED21	Power System Planning And Reliability	Power System	3	1/0	0/2	4
IED22	Control Design Techniques for Power Electronic Systems	Control System and Power Electronics	3	1/0	0/2	4
IED23	Electric and Hybrid Vehicles	Power Apparatus	3	1/0	0/2	4
IED24	Energy Storage Systems Energy Auditing and Management	Fundamental Chemistry and material science	3	1/0	0/2	4
IED25	Embedded Processors and Controllers	---	3	1/0	0/2	4
IED26	Computer Relaying And Wide Area Measurement Systems	---	3	1/0	0/2	4
IED27	Transient over Voltages in Power Systems	Engg Mathematics and Power systems	3	1/0	0/2	4
IED28	Digital Simulation of Power Electronic Systems	Power Electronics	3	1/0	0/2	4
IED29	Neural networks in embedded applications	Microprocessor	3	1/0	0/2	4
IED30	Fault Detection And Diagnosis	Engineering Mathematics	3	1/0	0/2	4
IED31	Intelligent Control	---	3	1/0	0/2	4
IED32	Reactive Power Control & Facts Devices	Power Electronics	3	1/0	0/2	4
IED33	Soft Computing	---	3	1/0	0/2	4
IED34	Energy Auditing	---	3	1/0	0/2	4

IED35	Virtual Instrument Design	Transducers , measurements	3	1/0	0/2	4
IED36	Non Linear System Control using Neural and Fuzzy Reinforcement Learning	---	3	1/0	0/2	4
IED37	Design techniques for SMPs	---	3	1/0	0/2	4

**M.TECH (MECHATRONICS)
(FULL TIME)**

**Semester-Wise Course Allocation
SEMESTER I**

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
MTC01	CC	Fundamentals Of Mechatronics	3	0	2	4	15	15	40	15	15	100
MTC02	CC	Dynamics And Control Systems	3	0	2	4	15	15	40	15	15	100
MTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
MTD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
MTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
EO***	EO	Open Elective#	-	-	-	4	25	25	50	-	-	100
		TOTAL	18	3	6	24						
			\$									

#The LTP Allocation, evaluation scheme and pre-requisites for electives are given in Table no:3,4. The coarse code will depend upon student's choice of elective(s).
\$ The actual weekly load will depend upon elective(s) chosen by the student.

SEMESTER II

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
MTC03	CC	Large Scale Systems	3	0	2	4	15	15	40	15	15	100
MTC04	CC	Modelling& Simulation of Mechatronics Systems	3	0	2	4	15	15	40	15	15	100
MTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
MTD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
MTD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EO***	EO	Open Elective#	-	-	-	4	25	25	50	-	-	100
		TOTAL	18	3	6	24						
			\$									

#The LTP Allocation, evaluation scheme and pre-requisites for electives are given in Table no:3,4. The coarse code will depend upon student's choice of elective(s).
\$ The actual weekly load will depend upon elective(s) chosen by the student.

SEMESTER III

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
MTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
MTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
MTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
MTC05	CC	Seminar	0	0	4	2	100	-	-	-	-	100
MTC06	CC	Major Project	0	0	-	6				40	60	100
		TOTAL	6	1	-	20						
			\$									

#The LTP Allocation, evaluation scheme and pre-requisites for electives are given in Table no:3,4. The course code will depend upon student's choice of elective(s).
\$ The actual weekly load will depend upon elective(s) chosen by the student.

SEMESTER IV

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
MTC07	CC	Dissertation	0	0	-	14	-	-	-	40	60	100
		TOTAL	0	0	-	14						

M.TECH (MECHATRONICS) (PART TIME)

Semester-Wise Course Allocation SEMESTER I

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
MTC01	CC	Fundamentals Of Mechatronics	3	0	2	4	15	15	40	15	15	100
MTC02	CC	Dynamics And Control Systems	3	0	2	4	15	15	40	15	15	100
EO***	EO	Open Elective#	-	-	-	4	25	25	50	-	-	100
		TOTAL	9	1	4	12						
			\$									

#The LTP Allocation, evaluation scheme and pre-requisites for electives are given in Table no: 3,4. The course code will depend upon student's choice of elective(s).
\$ The actual weekly load will depend upon elective(s) chosen by the student.

SEMESTER II

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Wightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
MTC03	CC	Large Scale Systems	3	0	2	4	15	15	40	15	15	100
MTC04	CC	Modelling & Simulation of Mechatronics Systems	3	0	2	4	15	15	40	15	15	100
EO***	EO	Open Elective#	-	-	-	4	25	25	50	-	-	100
		TOTAL	9	1	4	12						
			\$									

#The LTP Allocation, evaluation scheme and pre-requisites for electives are given in Table no: 3,4. The coarse code will depend upon student's choice of elective(s).
\$ The actual weekly load will depend upon elective(s) chosen by the student.

SEMESTER III

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Wightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
MTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
MTD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
MTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
		TOTAL	9	2	2	12						
			\$									

#The LTP Allocation, evaluation scheme and pre-requisites for electives are given in Table no:3,4. The coarse code will depend upon student's choice of elective(s).
\$ The actual weekly load will depend upon elective(s) chosen by the student.

SEMESTER IV

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Wightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
MTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
MTD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
MTD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL	9	2	2	12						
			\$									

#The LTP Allocation, evaluation scheme and pre-requisites for electives are given in Table no:3,4. The coarse code will depend upon student's choice of elective(s).
\$ The actual weekly load will depend upon elective(s) chosen by the student.

SEMESTER V

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Wightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
MTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
MTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
MTC06	CC	Major Project	0	0	-	6				40	60	100
		TOTAL	6	1	2	14						
			\$									

#The LTP Allocation, evaluation scheme and pre-requisites for electives are given in Table no:3,4. The coarse code will depend upon student's choice of elective(s).
\$ The actual weekly load will depend upon elective(s) chosen by the student.

SEMESTER VI

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
MTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
MTC05	CC	Seminar	0	0	4	2	100	-	-	-	-	100
MTC07	CC	Dissertation	0	0	-	14	-	-	-	40	60	100
		TOTAL	0	0	4	20						
			\$									

#The LTP Allocation, evaluation scheme and pre-requisites for electives are given in Table no:3,4. The coarse code will depend upon student's choice of elective(s).
\$ The actual weekly load will depend upon elective(s) chosen by the student.

TABLE NO: 3 LIST OF DISCIPLINE CENTRIC ELECTIVES

CODE	COUSRE OF STUDY	PREREQUISITE	L	T	P	C
MTD01	Principles of Electronic Devices	Basics of electrical and electronics	3	1/0	0/2	4
MTD02	Sensors and Signal Conditioning	Nil	3	1/0	0/2	4
MTD03	Industrial Robotics	Microcontroller	3	1/0	0/2	4
MTD04	Microcontroller And Programmable Logic Controllers (PLC)	Nil	3	1/0	0/2	4
MTD05	Industrial Electrical And Electronics	Power electronics	3	1/0	0/2	4
MTD06	Advanced Sensor Systems And Instrumentation	Electrical and electronics Measurement	3	1/0	0/2	4
MTD07	Fluid Power System And Factory Automation	Fundamental of Mechatronics and PLC	3	1/0	0/2	4
MTD08	AI Techniques and Applications	Nil	3	1/0	0/2	4
MTD09	Power Electronics	Circuit analysis, Electron devices and Electronic circuits, and Differential equations	3	1/0	0/2	4
MTD10	Power Electronics & Drives	Basics of Electrical machines and electronics	3	1/0	0/2	4
MTD11	Embedded Sensors And System Design	Digital electronics and measurement	3	1/0	0/2	4
MTD12	Mechatronics system design	Fundamental of Mechatronics and PLC	3	1/0	0/2	4

MTD13	Nano Technology	Applied physics,	3	1/0	0/2	4
MTD14	PC based automation	Microcontroller	3	1/0	0/2	4
MTD15	Industrial Automation	Basic of Manufacturing Systems	3	1/0	0/2	4
MTD16	Computational Techniques For Vibration Analysis And Control	Basic control engineering and measurement	3	1/0	0/2	4
MTD17	MEMS	Basics of electrical machines, control, manufacturing	3	1/0	0/2	4
MTD18	MEMS and NEMS	Basics of physics, chemistry and electronics	3	1/0	0/2	4
MTD19	Design of Hydraulic and pneumatic System	Fundamental of Mechatronics	3	1/0	0/2	4
MTD20	Machine tool control and condition monitoring	Sensors and transducer, electrical machine, control system	3	1/0	0/2	4
MTD21	Robust control	Control systems	3	1/0	0/2	4
MTD22	Instrumentation & Sensor Technology	Electrical and electronics measurement	3	1/0	0/2	4
MTD23	Introduction to Optimization Techniques	Nil	3	1/0	0/2	4
MTD24	Signal Processing in Mechatronic Systems	Signals and system	3	1/0	0/2	4
MTD25	Fault Detection And Diagnosis	Nil	3	1/0	0/2	4
MTD26	Drives And Controls For Automation	Electrical machine/power apparatus, power electronics	3	1/0	0/2	4
MTD27	Energy Auditing And Management	Nil	3	1/0	0/2	4
MTD28	Evolutionary Computations	Nil	3	1/0	0/2	4
MTD29	Fundamentals Of Electrical Machines And Drives	Basic electrical engineering	3	1/0	0/2	4
MTD30	Power Quality And Harmonics	Power electronics	3	1/0	0/2	4
MTD31	Digital Control Systems	Signal and systems	3	1/0	0/2	4
MTD32	Precision Engineering	Measurement and control system	3	1/0	0/2	4
MTD33	Reliability Engineering	Nil	3	1/0	0/2	4
MTD34	Real Time Systems And Software Development	Nil	3	1/0	0/2	4
MTD35	Concepts In Electronics Engineering	Nil	3	1/0	0/2	4
MTD36	Machine Vision	Analog and digital electronics	3	1/0	0/2	4

**M.TECH (BIOCHEMICAL ENGINEERING)
(FULL TIME)**

**Semester-Wise Course Allocation
SEMESTER I**

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
BCC01	CC	Bioprocess Principles and Technology	3	0	2	4	15	15	40	15	15	100
BCC02	CC	Enzyme Technology and Applications	3	0	2	4	15	15	40	15	15	100

BCD**	ED	Elective [#]	3	0	2	4	-	-	-	-	-	100
BCD**	ED	Elective [#]	3	1	0	4	-	-	-	-	-	100
BCD**	ED	Elective [#]	3	0	2	4	-	-	-	-	-	100
EO***	EO	Open Elective	3	1	0	4	-	-	-	-	-	100
		TOTAL				24						

#. The LTP allocation evaluation scheme and Pre-requisites for electives are given in Tables 3-4

The course code will depend upon student's choice of elective.

\$. The actual weekly load will depend upon the electives chosen by the student.

SEMESTER II

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					Total
							Theory			Practical		
							CA	MS	ES	Int	Ext	
BCC03	CC	Bioprocess Analysis and Reactor Design	3	0	2	4	15	15	40	15	15	100
BCC04	CC	Microbial Biochemistry	3	0	2	4	15	15	40	15	15	100
BCD**	ED	Elective [#]	3	0	2	4	-	-	-	-	-	100
BCD**	ED	Elective [#]	3	1	0	4	-	-	-	-	-	100
BCD**	ED	Elective [#]	3	0	2	4	-	-	-	-	-	100
EO***	EO	Open Elective	3	1	0	4	-	-	-	-	-	100
		TOTAL				24						

#. The LTP allocation evaluation scheme and Pre-requisites for electives are given in Tables 3-4

The course code will depend upon student's choice of elective.

\$. The actual weekly load will depend upon the electives chosen by the student.

SEMESTER III

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					Total
							Theory			Practical		
							CA	MS	ES	Int	Ext	
BCC05	CC	Seminar	0	0	4	2	-	-	-	40	60	100
BCC06	CC	Major Project	0	0	-	6				40	60	100
BCD**	ED	Elective [#]	3	0	2	4	15	15	40	15	15	100
BCD**	ED	Elective [#]	3	0	2	4	30	20	50	-	-	100
BCD**	ED	Elective [#]	-	-	-	4	50	-	50	-	-	100
		TOTAL				20						

#. The LTP allocation evaluation scheme and Pre-requisites for electives are given in Tables 3-4

The course code will depend upon student's choice of elective.

\$. The actual weekly load will depend upon the electives chosen by the student.

SEMESTER IV

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					Total
							Theory			Practical		
							CA	MS	ES	Int	Ext	
BCC07	CC	Dissertation	0	0	-	14	-	-	-	40	60	100
		TOTAL	-	-	-	14						

**M.TECH (BIOCHEMICAL ENGINEERING)
(PART TIME)**

**Semester-Wise Course Allocation
SEMESTER I**

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
BCC01	CC	Bioprocess Principles and Technology	3	0	2	4	15	15	40	15	15	100
BCC02	CC	Enzyme Technology and Applications	3	0	2	4	15	15	40	15	15	100
EO***	EO	Open Elective	-	-	-	4	-	-	-	-	-	100
		TOTAL				\$						

\$. The actual weekly load will depend upon the electives chosen by the student.

SEMESTER II

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
BCC03	CC	Bioprocess Analysis and Reactor Design	3	0	2	4	15	15	40	15	15	100
BCC04	CC	Microbial Biochemistry	3	0	2	4	15	15	40	15	15	100
EO***	EO	Open Elective	-	-	-	4	-	-	-	-	-	100
		TOTAL				\$						

\$. The actual weekly load will depend upon the electives chosen by the student.

SEMESTER III

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
BCD**	ED	Elective [#]	3	0	2	4	-	-	-	-	-	100
BCD**	ED	Elective [#]	3	1	0	4	-	-	-	-	-	100
BCD**	ED	Elective [#]	3	0	2	4	-	-	-	-	-	100
		TOTAL				\$						

#. The LTP allocation evaluation scheme and Pre-requisites for electives are given in Tables 3-4

The course code will depend upon student's choice of elective.

\$. The actual weekly load will depend upon the electives chosen by the student.

SEMESTER IV

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
BCD**	ED	Elective [#]	3	0	2	4	-	-	-	-	-	100
BCD**	ED	Elective [#]	3	1	0	4	-	-	-	-	-	100
BCD**	ED	Elective [#]	3	0	2	4	-	-	-	-	-	100
		TOTAL				12						

#. The LTP allocation evaluation scheme and Pre-requisites for electives are given in Tables 3-4 The course code will depend upon student's choice of elective.
\$. The actual weekly load will depend upon the electives chosen by the student.

SEMESTER V

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	Int	Ext	
BCC06	CC	Major Project	0	0	-	6	-	-	-	40	60	100
BCD**	ED	Elective [#]	3	0	2	4	-	-	-	-	-	100
BCD**	ED	Elective [#]	3	1	0	4	-	-	-	-	-	100
		TOTAL				14						

#. The LTP allocation evaluation scheme and Pre-requisites for electives are given in Tables 3-4
The course code will depend upon student's choice of elective.
\$. The actual weekly load will depend upon the electives chosen by the student.

SEMESTER VI

CODE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
						Theory			Practical		Total
						CA	MS	ES	Int	Ext	
BCC05	Seminar	0	0	4	2	50	-	50	-	-	100
BCC07	Dissertation	0	0	-	14	-	-	-	40	60	100
BCD**	Elective [#]	-	-	-	4	50	-	50	-	-	100
	TOTAL	-	-	-	20						

The LTP allocation evaluation scheme and Pre-requisites for electives are given in Tables 3-4
The course code will depend upon student's choice of elective.
\$. The actual weekly load will depend upon the electives chosen by the student.

TABLE 3A: LIST OF DISCIPLINE CENTRIC ELECTIVES WITH PRACTICAL

LTP Allocation			Evaluation Scheme				
L	T	P	CA	MS	ES	CA	ES
3	0	2	15	15	40	15	15
CODE	COURSE OF STUDY		PREREQUISITE				
BCD**							
BCD01	Introduction to Biochemical Engineering ¹		None				
BCD02	Thermodynamics of Biological System		None				
BCD03	Concepts in Modern Biology ²		None				
BCD04	Food Science and Engineering		None				
BCD05	Environmental Biotechnology		None				

BCD06	Biomass processing & Bioenergy	None
BCD07	Transport phenomena in biological systems	BCE-501/ BCE-503 (Intro to B. E.)
BCD08	Advance Genetic Engineering	BCE-501/ BCE-503 (Intro to B. E.)
BCD09	Advance Biochemical Engineering	BCE-501/ BCE-503 (Intro to B. E.)
BCD10	Animal and Plant Cell Technology	BCE-501, BCE-502
BCD11	Modeling and Simulation in Biochemical Engineering	BCE-508, BCE-502
BCD12	Biological Waste Treatment	BCE-505 (Env. BT)
BCD13	Advance Separation Process	BCE-501, BCE-507
BCD14	Bioprocess Plant Design	BCE-501, BCE-507

TABLE 3B: LIST OF DISCIPLINE CENTRIC ELECTIVES WITH TUTORIAL

LTP Allocation			Evaluation Scheme				
L	T	P	CA	MS	ES	CA	ES
3	1	0	25	25	50	-	-
CODE	COURSE OF STUDY		PREREQUISITE				
BCD**							
BCD31	Applied Biostatistics		None				
BCD32	Entrepreneurship, IPR and Biosafety		None				
BCD33	Computational Biology		None				
BCD34	Computational Fluid Dynamics		BCE-502				
BCD35	Metabolic Regulations and Engineering		BCE-501/ BCE-503 (Intro to B. E.)				

**M.TECH (CAD/CAM)
(FULL TIME)**

**Semester-Wise Course Allocation
SEMESTER I**

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION (MARKS)					Total
							Theory			Practical		
							CA	MS	ES	CA	ES	
CDC01	CC	Geometric Modeling	3	0	2	4	15	15	40	15	15	100
CDC02	CC	Computer Integrated Manufacturing System	3	0	2	4	15	15	40	15	15	100
CDD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
CDD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
CDD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EO***	EO	Open Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL		\$		24						

The LTP allocation evaluation scheme and pre-requisites for elective (s) are given in table 2-3.
\$ The actual weekly load will depend upon the elective (s) as chosen by the students.

SEMESTER II

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION (MARKS)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
CDC03	CC	CNC technology and Programming	3	0	2	4	15	15	40	15	15	100
CDC04	CC	Finite Element Analysis	3	0	2	4	15	15	40	15	15	100
CDD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
CDD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
CDD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EO***	EO	Open Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL				\$ 24						

The LTP allocation evaluation scheme and pre-requisites for elective (s) are given in table 2-3.

\$ The actual weekly load will depend upon the elective (s) as chosen by the students.

SEMESTER III

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION (MARKS)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
CDC05	CC	Seminar	0	0	4	2	100	-	-	-	-	100
CDC06	CC	Major Project	-	-	-	6	-	-	-	40	60	100
CDD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
CDD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
CDD**	ED	Elective #	-	-	-	4	-	-	100	-	-	100
		TOTAL				\$ 20						

The LTP allocation evaluation scheme and pre-requisites for elective (s) are given in table 2-3.

\$ The actual weekly load will depend upon the elective (s) as chosen by the students.

SEMESTER IV

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION (MARKS)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
CDC07	CC	Dissertation	0	0	-	14	-	-	-	40	60	100
		TOTAL	0	0	-	14						

**M.TECH (CAD/CAM)
(PART TIME)**

**Semester-Wise Course Allocation
SEMESTER I**

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
CDC01	CC	Geometric Modeling	3	0	2	4	15	15	40	15	15	100
CDC02	CC	Computer Integrated Manufacturing System	3	0	2	4	15	15	40	15	15	100
EO***	EO	Open Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL		\$		16						

The LTP allocation evaluation scheme and pre-requisites for elective (s) are given in table 2-3.

\$ The actual weekly load will depend upon the elective (s) as chosen by the students.

SEMESTER II

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Wightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
CDC03	CC	CNC technology and Programming	3	0	2	4	15	15	40	15	15	100
CDC04	CC	Finite Element Analysis	3	0	2	4	15	15	40	15	15	100
EO***	EO	Open Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL		\$		12						

The LTP allocation evaluation scheme and pre-requisites for elective (s) are given in table 2-3.

\$ The actual weekly load will depend upon the elective (s) as chosen by the students.

SEMESTER III

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Wightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
CDD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
CDD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
CDD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL		\$		12						

The LTP allocation evaluation scheme and pre-requisites for elective (s) are given in table 2-3.

\$ The actual weekly load will depend upon the elective (s) as chosen by the students.

SEMESTER IV

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Wightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
CDD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
CDD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
CDD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL	\$			12						

The LTP allocation evaluation scheme and pre-requisites for elective (s) are given in table 2-3.
\$ The actual weekly load will depend upon the elective (s) as chosen by the students.

SEMESTER V

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Wightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
CDD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
CDD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
CDC06	CC	Major Project	-	-	-	6	-	-	-	40	60	100
		TOTAL	\$			14						

The LTP allocation evaluation scheme and pre-requisites for elective (s) are given in table 2-3.
\$ The actual weekly load will depend upon the elective (s) as chosen by the students.

SEMESTER VI

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Wightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
CDD**	ED	Elective #	-	-	-	4	-	-	100	-	-	100
CDC05	CC	Seminar	0	0	4	2	-	-	-	40	60	100
CDC07	CC	Dissertation	0	0	-	14	-	-	-	40	60	100
		TOTAL	\$			20						

The LTP allocation evaluation scheme and pre-requisites for elective (s) are given in table 2-3.
\$ The actual weekly load will depend upon the elective (s) as chosen by the students

TABLE 2A: LIST OF DISCIPLINE CENTRIC ELECTIVES WITH TUTORIAL

LTP Allocation			Evaluation Scheme				
L	T	P	CA	MS	ES	CA	MS
3	1	0	25	25	50	-	-
Code	Name of Elective		Pre-Requisites				
CDD01	Industrial Statistics and Forecasting		None				
CDD02	Manufacturing Information System		None				
CDD03	Computer Aided Process Planning		None				
CDD04	Manufacturing Automation and Control		None				
CDD05	Advanced Machine Tool Design		None				

CDD06	Design for Manufacture	None
CDD07	Optimization in Design	None
CDD08	Reliability Engineering	None
CDD09	Advanced Concurrent Engineering	None
CDD10	Manufacturing System and Simulation	None
CDD11	Computational Methods	None
CDD12	Optimization Techniques	None
CDD13	IT in Manufacturing Enterprise	None
CDD14	Applied Operations Research	None
CDD15	Design of Process Equipments	None
CDD16	Value Engineering	None
CDD17	Mechatronics in Manufacturing System	None
CDD18	Design of Experiments	None
CDD19	Modelling of Metal Forming Processes	None
CDD20	Mechanical Vibrations	None

TABLE 2B: LIST OF DISCIPLINE CENTRIC ELECTIVES WITH PRACTICAL

LTP Allocation			Evaluation Scheme				
L	T	P	CA	MS	ES	CA	ES
3	0	2	15	15	40	15	15
Code	Name of Elective	Pre-Requisites					
CDD31	Computer Methods in Mechanical Design	None					
CDD32	Robotics	None					
CDD33	Product Design and Development Strategies	None					
CDD34	Computational Fluid Dynamics	None					
CDD35	System Engineering	None					
CDD36	Flexible Manufacturing System	None					
CDD37	Artificial Intelligence	None					
CDD38	Rapid Prototyping and Tooling	None					

**M.TECH
(MANUFACTURING PROCESSES AND AUTOMATION ENGINEERING)
(FULL TIME)**

**Semester-Wise Course Allocation
SEMESTER I**

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION (MARKS)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
MPC01	CC	Advanced Manufacturing Process	3	0	2	4	15	15	40	15	15	100
MPC02	CC	Robotics	3	0	2	4	15	15	40	15	15	100
MPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
MPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
MPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EO***	EO	Open Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL	\$			24						

#: The LTP allocation, Evaluation Scheme and Pre-requisites for Elective(s) are given in Tables 2-3

\$: The actual weekly load will depend upon the elective(s) chosen by the student

SEMESTER II

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION (MARKS)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
MPC03	CC	Manufacturing Automation and Control	3	0	2	4	15	15	40	15	15	100
MPC04	CC	C.I.M.	3	0	2	4	15	15	40	15	15	100
MPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
MPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
MPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EO***	EO	Open Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL	\$			24						

#: The LTP allocation, Evaluation Scheme and Pre-requisites for Elective(s) are given in Tables 2-3
\$: The actual weekly load will depend upon the elective(s) chosen by the student

SEMESTER III

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION (MARKS)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
MPC05	CC	Seminar	0	0	4	2	-	-	-	40	60	100
MPC06	CC	Major project	-	-	-	6	-	-	-	40	60	100
MPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
MPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
MPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL	\$			20						

#: The LTP allocation, Evaluation Scheme and Pre-requisites for Elective(s) are given in Tables 2-3
\$: The actual weekly load will depend upon the elective(s) chosen by the student

SEMESTER IV

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION (MARKS)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
MPC07	CC	Dissertation	-	-	-	14	-	-	-	40	60	100
		TOTAL	-	-	-	14						

**M.TECH
(MANUFACTURING PROCESSES AND AUTOMATION ENGINEERING)
(PART TIME)**

**Semester-Wise Course Allocation
SEMESTER I**

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
MPC01	CC	Advanced Manufacturing Process	3	0	2	4	15	15	40	15	15	100
MPC02	CC	Robotics	3	0	2	4	15	15	40	15	15	100

EO**	EO	Open Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL	\$			12						

#: The LTP allocation, Evaluation Scheme and Pre-requisites for Elective(s) are given in Table 2-3
\$: The actual weekly load will depend upon the elective(s) chosen by the student

SEMESTER II

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
MPC03	CC	Manufacturing Automation and Control	3	0	2	4	15	15	40	15	15	100
MPC04	CC	C.I.M.	3	0	2	4	15	15	40	15	15	100
EO***	EO	Open Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL	\$			12						

#: The LTP allocation, Evaluation Scheme and Pre-requisites for Elective(s) are given in Table 2-3.
\$: The actual weekly load will depend upon the elective(s) chosen by the student

SEMESTER III

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
MPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
MPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
MPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL	\$			12						

#: The LTP allocation, Evaluation Scheme and Pre-requisites for Elective(s) are given in Tables 2-3.
\$: The actual weekly load will depend upon the elective(s) chosen by the student

SEMESTER IV

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
MPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
MPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
MPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL	\$			12						

#: The LTP allocation, Evaluation Scheme and Pre-requisites for Elective(s) are given in Tables 2-3.
\$: The actual weekly load will depend upon the elective(s) chosen by the student

SEMESTER V

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
MPC06	CC	Major project	-	-	-	6	-	-	-	40	60	100
MPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100

MPD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL	\$			14						
#: The LTP allocation, Evaluation Scheme and Pre-requisites for Elective(s) are given in Tables 2-3.												
\$: The actual weekly load will depend upon the elective(s) chosen by the student												

SEMESTER VI

CODE	TYPE	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME					Total
							Percentage (Weightage)					
							Theory			Practical		
CA	MS	ES	CA	ES								
MPC05	CC	Seminar	-	-	4	2	-	-	-	40	60	100
MPC07	CC	Dissertation	-	-	-	14	-	-	-	40	60	100
MPD**	ED	Elective #	-	-	-	4	-	-	100	-	-	100
		TOTAL	\$			20						
#: The LTP allocation, Evaluation Scheme and Pre-requisites for Elective(s) are given in Tables 2-3.												
\$: The actual weekly load will depend upon the elective(s) chosen by the student												

TABLE 2A:- LIST OF DISCIPLINE CENTRIC ELECTIVES WITH TUTORIAL

LTP Allocation			Evaluation Scheme				
L	T	P	CA	MS	ES	CA	ES
3	1	0	25	25	50	-	-
Code	Name of Elective		Pre-Requisites				
MPD01	Applied Operation Research		None				
MPD02	Micro Electro Mechanical System		None				
MPD03	IT in Manufacturing Enterprises		None				
MPD04	Optimization in Design		None				
MPD05	Advanced Mathematics & Numerical Analysis		None				
MPD06	Computational Methods		None				
MPD07	Finite Element method		None				
MPD08	Embedded systems		None				
MPD09	Mechatronics		None				
MPD10	Smart Materials, Machines and Processes		None				
MPD11	Design of Experiments		None				
MPD12	Composite Materials		None				
MPD13	Reliability Engineering		None				
MPD14	Modelling of metal forming processes		None				
MPD15	Value Engineering		None				
MPD16	Total Quality Management		None				

TABLE 2B:- LIST OF DISCIPLINE CENTRIC ELECTIVES WITH PRACTICAL

LTP Allocation			Evaluation Scheme				
L	T	P	CA	MS	ES	CA	ES
3	0	2	15	15	40	15	15
Code	Name of Elective		Pre-Requisites				
MPD31	CNC Technology & Programming		None				
MPD32	Computer Programming & Interfacing		None				
MPD33	Manufacturing Technology		None				

MPD34	Rapid prototyping	None
MPD35	Casting and welding process & Automation	None
MPD36	Conventional & Unconventional Machining	None
MPD37	Design of Machine tools and Cutting Tools	None
MPD38	Automation in Manufacturing	None
MPD39	Advanced Robotics	None
MPD40	Artificial Intelligence	None
MPD41	Flexible Manufacturing System	None
MPD42	CAD and Geometric Modeling	None

**M.TECH (PRODUCTION ENGINEERING)
(FULL TIME)**

**Semester-Wise Course Allocation
SEMESTER I**

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION (MARKS)					Total
							Theory			Practical		
							CA	MS	ES	CA	ES	
PEC01	CC	Casting & Welding: Processes & Automation	3	0	2	4	15	15	40	15	15	100
PEC02	CC	Theory of Plasticity and Metal Forming	3	0	2	4	15	15	40	15	15	100
PED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
PED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
PED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EO***	EO	Open Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL				\$ 24						

#: The LTP allocation, Evaluation Scheme and Pre-requisites for Elective(s) are given in Tables 2-3

\$. The actual weekly load will depend upon the elective(s) chosen by the student

SEMESTER II

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION (MARKS)					Total
							Theory			Practical		
							CA	MS	ES	CA	ES	
PEC03	CC	Advanced Manufacturing Processes	3	0	2	4	15	15	40	15	15	100
PEC04	CC	Generative Manufacturing Processes	3	0	2	4	15	15	40	15	15	100
PED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
PED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
PED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
PEO**	EO	Open Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL				\$ 24						

#: The LTP allocation, Evaluation Scheme and Pre-requisites for Elective(s) are given in Tables 2-3

\$. The actual weekly load will depend upon the elective(s) chosen by the student

SEMESTER III

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION (MARKS)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
PEC05	CC	Seminar	0	0	4	2	-	-	-	40	60	100
PEC06	CC	Major Project	0	0	-	6				40	60	100
PED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
PED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
PED**	ED	Elective #	-	-	-	4	-	--	-	-	--	100
		TOTAL	\$			20						

#: The LTP allocation, Evaluation Scheme and Pre-requisites for Elective(s) are given in Tables 2-3.
\$: The actual weekly load will depend upon the elective(s) chosen by the student

SEMESTER IV

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION (MARKS)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
PEC07	CC	Dissertation	-	-	-	14	-	-	-	40	60	100
		TOTAL	-	-	-	14						

M.TECH (PRODUCTION ENGINEERING) (PART TIME)

Semester-Wise Course Allocation SEMESTER I

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
PEC01	CC	Casting & Welding: Processes & Automation	3	0	2	4	15	15	40	15	15	100
PEC02	CC	Theory of Plasticity and Metal Forming	3	0	2	4	15	15	40	15	15	100
EO***	EO	Open Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL	\$			12						

#: The LTP allocation, Evaluation Scheme and Pre-requisites for Elective(s) are given in Tables 2-3.
\$: The actual weekly load will depend upon the elective(s) chosen by the student

SEMESTER II

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
PEC03	CC	Advanced Manufacturing Processes	3	0	2	4	15	15	40	15	15	100
PEC04	CC	Generative Manufacturing Processes	3	0	2	4	15	15	40	15	15	100
EO***	EO	Open Elective #	-	-	-	4	-	-	-	-	-	-
		TOTAL	\$			12						

#: The LTP allocation, Evaluation Scheme and Pre-requisites for Elective(s) are given in Tables 2-3
\$: The actual weekly load will depend upon the elective(s) chosen by the student

SEMESTER III

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
PED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
PED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
PED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL	\$			12	-	-	-	-	-	100

#: The LTP allocation, Evaluation Scheme and Pre-requisites for Elective(s) are given in Tables 2-3.
\$: The actual weekly load will depend upon the elective(s) chosen by the student

SEMESTER IV

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
PED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
PED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
PED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL	\$			12						

#: The LTP allocation, Evaluation Scheme and Pre-requisites for Elective(s) are given in Tables 2-3.
\$: The actual weekly load will depend upon the elective(s) chosen by the student

SEMESTER V

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
PED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
PED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
PEC06	CC	Major Project	-	-	-	6	-	-	-	40	60	100
		TOTAL	\$			14						

#: The LTP allocation, Evaluation Scheme and Pre-requisites for Elective(s) are given in Tables 2-3.
\$: The actual weekly load will depend upon the elective(s) chosen by the student

SEMESTER VI

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
PED**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
PEC05	CC	Seminar	-	-	4	2	-	-	-	40	60	100
PEC07	CC	Dissertation	-	-	-	14	-	-	-	40	60	100
		TOTAL	\$			20						

#: The LTP allocation, Evaluation Scheme and Pre-requisites for Elective(s) are given in Tables 2-3.
\$: The actual weekly load will depend upon the elective(s) chosen by the student

TABLE 2A: LIST OF DISCIPLINE CENTRIC ELECTIVES WITH TUTORIAL

LTP Allocation			Evaluation Scheme				
L	T	P	CA	MS	ES	CA	ES
3	1	0	25	25	50	-	-
Code	Name of Elective	Pre-Requisites					
PED01	Operation Research & Production Management	NONE					
PED02	Artificial Intelligence	NONE					
PED03	Design of Experiments	NONE					
PED04	Design of Facilities	NONE					
PED05	Design of Management and Information System	NONE					
PED06	Financial Management	NONE					
PED07	Work Study and Ergonomics	NONE					
PED08	Reliability Engineering	NONE					
PED09	Computational Methods	NONE					
PED10	Optimization Techniques	NONE					
PED11	IT in Manufacturing Enterprises	NONE					
PED12	Value Engineering	NONE					
PED13	Supply Chain Management	NONE					
PED14	Maintenance Management	NONE					
PED15	Design for Manufacture	NONE					

TABLE 2B: LIST OF DISCIPLINE CENTRIC ELECTIVES WITH PRACTICAL

LTP Allocation			Evaluation Scheme				
L	T	P	CA	MS	ES	CA	ES
3	0	2	15	15	40	15	15
Code	Name of Elective	Pre-Requisites					
PED31	Advanced Mathematics and Numerical Analysis	NONE					
PED32	Robotics	NONE					
PED33	Product Design and Manufacturing	NONE					
PED34	Computer Aided Manufacturing (CAM)	NONE					
PED35	Metrology	NONE					
PED36	Finite Element Methods	NONE					
PED37	Automation in Manufacturing	NONE					
PED38	Flexible Manufacturing Systems	NONE					
PED39	Design of Machine Tools and Cutting Tools	NONE					
PED40	Mechatronics	NONE					
PED41	CAD and Geometric Modeling	NONE					
PED42	Computer Programming and Interface	NONE					
PED43	Composite Materials	NONE					
PED44	Micro Electro Mechanical Systems	NONE					
PED45	CNC Operation and Programming	NONE					
PED46	Advanced Machining Processes	NONE					

**M.TECH (ENGINEERING MANAGEMENT)
(FULL TIME)**

**Semester-Wise Course Allocation
SEMESTER I**

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION (MARKS)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
EMC01	CC	Operation Planning and Control	3	0	2	4	15	15	40	15	15	100
EMC02	CC	Inventory Control and Materials Management	3	0	2	4	15	15	40	15	15	100
EMD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EMD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EMD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EO***	EO	Open Elective #	-	-	-	4	-	-	-	-	-	100
		Total		\$		24						

The LTP allocation evaluation scheme and pre-requisites for elective(s) are given in Table 2-3.
\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER II

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION (MARKS)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
EM03	CC	Operations Research	3	0	2	4	10	20	40	15	15	100
EM04	CC	Industrial Statistics & Forecasting	3	0	2	4	10	20	40	15	15	100
EMD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EMD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EMD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EO***	EO	Open Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL		\$		24						

The LTP allocation evaluation scheme and pre-requisites for elective(s) are given in Table 2-3.
\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER III

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION (MARKS)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
EMC05	CC	Seminar	0	0	4	2	100	-	-	-	-	100
EMC06	CC	Major Project	-	-	-	6	-	-	-	40	60	100
EMD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EMD**	ED	Elective #	-	-	-	4	-	-	50	-	-	100
EMD**	ED	Elective #	-	-	-	4	-	-	100	-	-	100
		TOTAL		\$		20						

The LTP allocation evaluation scheme and pre-requisites for elective(s) are given in Table 2-3.
\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER IV

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION (MARKS)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
EM07	CC	Dissertation	0	0	-	14	-	-	-	40	60	100
		TOTAL	-	-	-	14						

**M.TECH (ENGINEERING MANAGEMENT)
(PART TIME)**

**Semester-Wise Course Allocation
SEMESTER I**

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
EMC01	CC	Operation Planning and Control	3	0	2	4	15	15	40	15	15	100
EMC02	CC	Inventory Control and Materials Management	3	0	2	4	15	15	40	15	15	100
EO***	EO	Open Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL				\$ 12						

The LTP allocation evaluation scheme and pre-requisites for elective (s) are given in table 2-3.
\$ The actual weekly load will depend upon the elective (s) as chosen by the students.

SEMESTER II

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Wightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
EM03	CC	Operations Research	3	0	2	4	15	15	40	15	15	100
EM04	CC	Industrial Statistics & Forecasting	3	0	2	4	15	15	40	15	15	100
EO***	EO	Open Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL				\$ 12						

The LTP allocation evaluation scheme and pre-requisites for elective (s) are given in table 2-3.
\$ The actual weekly load will depend upon the elective (s) as chosen by the students.

SEMESTER III

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Wightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
EMD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EMD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EMD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL				\$ 12						

The LTP allocation evaluation scheme and pre-requisites for elective (s) are given in table 2-3.
\$ The actual weekly load will depend upon the elective (s) as chosen by the students.

SEMESTER IV

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
EMD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EMD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EMD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
		TOTAL				\$	12					

The LTP allocation evaluation scheme and pre-requisites for elective (s) are given in table 2-3.
\$ The actual weekly load will depend upon the elective (s) as chosen by the students.

SEMESTER V

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
EMD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EMD**	ED	Elective #	-	-	-	4	-	-	-	-	-	100
EMC06	CC	Major Project	-	-	-	6	-	-	-	40	60	100
		TOTAL				\$	14					

The LTP allocation evaluation scheme and pre-requisites for elective (s) are given in table 2-3.
\$ The actual weekly load will depend upon the elective (s) as chosen by the students.

SEMESTER VI

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
EMD**	ED	Elective #	-	-	-	4	-	-	100	-	-	100
EMC05	CC	Seminar	0	0	4	2	-	-	-	40	60	100
EMC07	CC	Dissertation	0	0	-	14	-	-	-	40	60	100
		TOTAL				\$	20					

The LTP allocation evaluation scheme and pre-requisites for elective (s) are given in table 2-3.
\$ The actual weekly load will depend upon the elective (s) as chosen by the students.

TABLE 2A: LIST OF DISCIPLINE CENTRIC ELECTIVES WITH TUTORIAL

LTP Allocation			Evaluation Scheme				
L	T	P	CA	MS	ES	CA	MS
3	1	0	25	25	50	-	-
Code	Name of Elective	Pre-Requisite(s)					
EMD01	Quality Control						
EMD02	Financial Engineering						
EMD03	Work study and ergonomics						
EMD04	Management Concepts and Organizational Behaviour						
EMD05	Supply chain logistics Management						
EMD06	Design of Facilities						
EMD07	Reliability Engineering						
EMD08	Total Quality management						

EMD09	Production Management	
EMD10	Advanced Concurrent Engineering	
EMD11	Project management	
EMD12	Design for Manufacture	
EMD13	Value Engineering	
EMD14	Industrial waste Management	
EMD15	IT in Manufacturing Enterprise	
EMD16	Applied Operations Research	
EMD17	Optimization Techniques	
EMD19	Design of experiments	

TABLE 2B: LIST OF DISCIPLINE CENTRIC ELECTIVES WITH PRACTICAL

LTP Allocation			Evaluation Scheme				
L	T	P	CA	MS	ES	CA	ES
3	0	2	15	15	40	15	15
Code	Name of Elective	Pre-Requisites					
EMD31	Design of Management Information System						
EMD32	Systems Engineering						
EMD33	Automation in manufacturing						
EMD34	Advanced Operations Research						
EMD35	Computer integrated Manufacturing						
EMD36	Metrology						
EMD37	Flexible Manufacturing System						

**M.TECH (NANO TECHNOLOGY)
(FULL TIME)**

**Semester-Wise Course Allocation
SEMESTER I**

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION (MARKS)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
NTC01	CC	Fundamental Physics and Chemistry of Materials	3	0	2	4	15	15	40	15	15	100
NTC02	CC	Introduction to Nanotechnology	3	0	2	4	15	15	40	15	15	100
NTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
NTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
NTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
EO***	EO	Open Elective#	-	-	-	4	-	-	-	-	-	100
		TOTAL	\$			24						

The LTP allocation evaluation scheme and pre-requisites for elective(s) are given in Table 2-3.
\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER II

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION (MARKS)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
NTC03	CC	Micro Electro Mechanical Systems	3	0	2	4	10	20	40	15	15	100
NTC04	CC	Measurement and Microscopic Techniques at Nanoscale	3	0	2	4	10	20	40	15	15	100
NTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
NTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
NTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
NTD**	EO	Open Elective#	-	-	-	4	-	-	-	-	-	100
TOTAL			\$			24						

The LTP allocation evaluation scheme and pre-requisites for elective(s) are given in Table 2-3.
 \$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER III

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION (MARKS)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
NTC05	CC	Seminar	0	0	4	2	100	-	-	-	-	100
NTC06	CC	Major Project	-	-	-	6	-	-	-	40	60	100
NTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
NTD**	ED	Elective#	-	-	-	4	30	20	50	-	-	100
NTD**	ED	Elective#	-	-	-	4	-	-	100	-	-	100
TOTAL			\$			20						

The LTP allocation evaluation scheme and pre-requisites for elective(s) are given in Table 2-3.
 \$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER IV

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION (MARKS)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
NTC07	CC	Dissertation	0	0	-	14	-	-	-	40	60	100
TOTAL			-	-	-	14						

**M.TECH (NANO TECHNOLOGY)
(PART TIME)**

**Semester-Wise Course Allocation
SEMESTER I**

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
NTC01	CC	Fundamental Physics and Chemistry of Materials	3	0	2	4	15	15	40	15	15	100

NTC02	CC	Introduction to Nanotechnology	3	0	2	4	15	15	40	15	15	100	
EO***	EO	Open Elective#	-	-	-	4	-	-	-	-	-	100	
		TOTAL	\$				12						

The LTP allocation evaluation scheme and pre-requisites for elective(s) are given in Table 2-3.
\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER II

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					Total	
							Theory			Practical			
							CA	MS	ES	CA	ES		
NTC03	CC	Micro Electro Mechanical Systems	3	0	2	4	10	20	40	15	15	100	
NTC04	CC	Measurement and Microscopic Techniques at Nanoscale	3	0	2	4	10	20	40	15	15	100	
EO***	EO	Open Elective#	-	-	-	4	-	-	-	-	-	100	
		TOTAL	\$				12						

The LTP allocation evaluation scheme and pre-requisites for elective(s) are given in Table 2-3.
\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER III

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					Total	
							Theory			Practical			
							CA	MS	ES	CA	ES		
NTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100	
NTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100	
NTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100	
		TOTAL	\$				12						

The LTP allocation evaluation scheme and pre-requisites for elective(s) are given in Table 2-3.
\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER IV

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					Total	
							Theory			Practical			
							CA	MS	ES	CA	ES		
NTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100	
NTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100	
NTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100	
		TOTAL	\$				12						

The LTP allocation evaluation scheme and pre-requisites for elective(s) are given in Table 2-3.
\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER V

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
NTC06	CC	Major Project	-	-	-	6	-	-	-	40	60	100
NTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
NTD**	ED	Elective#	-	-	-	4	-	-	-	-	-	100
		TOTAL	\$			14						

The LTP allocation evaluation scheme and pre-requisites for elective(s) are given in Table 2-3.
\$ The actual weekly load will depend upon the elective(s) chosen by the student.

SEMESTER VI

CODE	Type	COURSE OF STUDY	L	T	P	C	EVALUATION SCHEME Percentage (Weightage)					
							Theory			Practical		Total
							CA	MS	ES	CA	ES	
NTD**	ED	Elective#	-	-	-	4	-	-	100	-	-	100
NTC05	CC	Seminar	0	0	4	2	100	-	-	-	-	100
NTC07	CC	Dissertation	0	0	-	14	-	-	-	40	60	100
		TOTAL	\$			20						

The LTP allocation evaluation scheme and pre-requisites for elective(s) are given in Table 2-3.
\$ The actual weekly load will depend upon the elective(s) chosen by the student.

TABLE 2 A: DISCIPLINE CENTRIC ELECTIVES WITH TUTORIAL

LTP Allocation			Evaluation Scheme				
L	T	P	CA	MS	ES	CA	ES
3	1	0	25	25	50	-	-
Code	Name of Elective	Pre-Requisites					
NTD01	Nano-Manufacturing	None					
NTD02	Nano-Structures	None					
NTD03	Nano Electronics	None					
NTD04	Fabrication of Nano Materials	None					
NTD05	Nano Biotechnology	None					
NTD06	Nano Electronic Devices	None					
NTD07	Micro Electro Mechanical System	None					
NTD08	Measurement and Microscopic Techniques at Nano scale	None					
NTD09	Embedded systems	None					
NTD10	Mechatronics	None					
NTD11	Smart Materials, Machines and Processes	None					
NTD12	Cell and Molecular Biology	None					
NTD13	Nano composites	None					
NTD14	Carbon Nanotube Electronics and Devices	None					
NTD15	Design of Experiments	None					
NTD16	Nano photonics	None					
NTD17	Industrial Nanotechnology	None					

**TABLE 2B: LIST OF DOMAIN SPECIFIC ELECTIVES
PART B: WITH PRACTICAL**

LTP Allocation			Evaluation Scheme				
L	T	P	CA	MS	ES	CA	ES
3	0	2	15	15	40	15	15
Code	Name of Elective	Pre-Requisites					
NTD31	Quantum Physics at Nano scale	None					
NTD32	Nano materials	None					
NTD33	Chemistry of Nano materials	None					
NTD34	Quantum Computation and Communications	None					
NTD35	Solid State Technology	None					
NTD36	Synthesis and Characterization Techniques for Nano materials	None					
NTD37	Green Manufacturing Technology	None					
NTD38	Nano medicine	None					
NTD39	Nano scale Magnetic Materials and Devices	None					

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