STUDENT HAND BOOK

Applicable for students admitted into
B.Tech Program from 2017-2018

K L University
(Deemed to be University estd. u/s. 3 of the UGC Act, 1956)
(NAAC Accredited “A” Grade University)

CONTENT

CHAPTER 1

ACADEMIC RULES & REGULATIONS FOR B. TECH PROGRAM

This document supplements the University rules and regulations to provide assistance to all B.Tech students. It is required that every individual has to abide by these regulations.

TERMINOLOGY

Academic Council: The Academic Council is the highest academic body of the University and is responsible for the maintenance of standards of instruction, education and examination within the University. Academic Council is an authority as per UGC regulations and it has the right to take decisions on all academic matters including academic research.
Academic Year: It is the period necessary to complete an actual course of study within a year. It comprises of two consecutive semesters i.e., Even and Odd semester.
Audited Course: It is a course of study which neither has evaluation component nor a grade.
Backlog Course: A course is considered to be a backlog course if the student has obtained a failure grade (F).
Basic Sciences : The courses of foundational nature in the areas of Mathematics, Physics, Chemistry, Biology etc., are offered in this category.
Betterment : Betterment is a way that contributes towards improving the students' grade in any course(s). It can be done by either (a) re-appearing or (b) re-registering for the course.
Board of Studies : Board of Studies (BOS) is an authority as defined in UGC regulations, constituted by Vice Chancellor for each of the department separately. They are responsible for curriculum design and update in respect of all the programs offered by a department.
Branch of Study: It is a branch of knowledge, an area of study or a specific program (like Civil Engineering, Mechanical Engineering, Electrical and Electronics Engineering etc.)
Certificate course : It is a course that makes a student gain hands-on expertise and skills required for holistic development. It is a mandatory, non-credited course for the award of degree.
Change of Branch : Change of branch means transfer from one's branch of study to other.
Compulsory course : Course required to be undertaken for the award of the degree as per the program.
Course : A course is a subject offered by the University for learning in a particular semester.
Course Handout : Course Handout is a document, which gives complete plan of the course. It contains the details of the course viz. Course title, Course code, Pre-requisite, Credit structure, team of instructors, Course objectives, Course rationale, Course Outcomes and the relevant syllabus, textbook(s) and reference books, Course delivery plan and session plan, evaluation method, chamber consultation hour, course notices and other course related aspects. In essence, course handout is an agreement between students (learners) and the instructor.
Course Outcomes : The essential skills that need to be acquired by every student through a course.
Credit : A credit is a unit that gives weight to the value, level or time requirements of an academic course. The number of 'Contact Hours' in a week of a particular course determines its credit value. One credit is equivalent to one lecture hour per week or two hours per week of tutorials/ self-learning/ practical/ field work during a semester.
Credit point : It is the product of grade point and number of credits for a course.
Credit Transfer : The procedure of granting credit(s) to a student for course(s) undertaken at another institution.
Cumulative Grade Point Average (CGPA) : It is a measure of cumulative performance of a student over all the completed semesters. The CGPA is the ratio of total credit points secured by a student in various courses in all semesters and the sum of the total credits of all courses in all the semesters. It is expressed up to two decimal places.
Curriculum : Curriculum incorporates the planned interaction of students with instructional content, materials, resources, and processes for evaluating the attainment of Program Educational Objectives.
Degree : A student who fulfills all the Program requirements is eligible to receive a degree.

Degree with Specialization : A student who fulfills all the Program requirements of her/his discipline and successfully completes a specified set of Professional elective courses in a specialized area is eligible to receive a degree with specialization.

Department : An academic entity that conducts relevant curricular and co-curricular activities, involving both teaching and non-teaching staff and other resources.

Detention in a course : Student who does not obtain minimum prescribed marks in continuous in-semester evaluation and /or minimum prescribed attendance in a course shall be detained in that particular course.

Dropping from the Semester : A student who doesn't want to register for the semester should do so in writing in a prescribed format before commencement of the semester.

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

Engineering Sciences : The courses belonging to basic evolutionary aspects of engineering from Mechanical Sciences, Electrical Sciences and Computing like Engineering Mechanics, Data structures, Network Theory, Signal Analysis etc...

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

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

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

Honors Degree

A student who fulfills all the Program requirements of her/his discipline and successfully completes a specified set of additional courses within the same program is eligible to receive an Honors degree.

Humanities Elective : A course offered in the area of Liberal Arts.

Industrial Training : Training program undergone by the student as per the academic requirement in any company/firm. It is a credited course.

Industrial Visit : Visit to acompany/firm as per the academic requirement.

In-Semester Evaluation : Summative assessments used to evaluate student learning, acquired skills, and academic attainment during a course.

Make-up Test : An additional test scheduled on a date other than the originally scheduled date.

Management elective: A course thatdevelops managerial skills and inculcates entrepreneurial skills.

Mini project : Mini Project is a credit-based course that a student has to undergo during his/her academic term, which involves the student to explore in a discipline belonging to their research interest within their program area.

Minor Degree : A student who fulfills all the Program requirements of her/his discipline and successfully completes a specified set of courses from another discipline is eligible to receive a minor degree in that discipline.

Multi- Section Course : Course taught for more than one section.

Open Elective : This is a course of interdisciplinary nature. It is offered across the University for all programs.

Over loading : Registering for more number of credits than normally prescribed by the Program in a semester.

Practice School : It is a part of the total program and takes one full semester in a professional location, where the students and the faculty get involved in finding solutions to real-world problems. A student can choose Project/Practice School during his/her 7^{th} or 8^{th} semester of his/her Academic Year to meet the final requirements for a degree.

Pre-requisite : A course, the knowledge of which is required for registration into higher level course.

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

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

Program : A set of courses offered by the Department. A student can opt and complete the stipulated minimum credits to qualify for the award of a degree in that Program.

Program Educational Objectives : The broad career, professional, personal goals that every student will achieve through a strategic and sequential action plan.
Project : Course that a student has to undergo during his/her final year which involves the student to undertake a research or design, which is carefully planned to achieve a particular aim. It is a credit based course.
Project based laboratory : Project Based Laboratory is a student-centric learning methodology that involve students in design, problem-solving, decision making, and investigative activities; gives students the opportunity to work in teams, over extended periods of time; and culminate in realistic products or presentations
Re-Appearing : A student can reappear only in the semester end examination for the Theory component of a course, subject to the regulations contained herein.
Registration : Process of enrolling into a set of courses in a semester/ term of the Program.
Re-Registering : A student desiring to repeat a course is permitted to do so, subject to the regulations contained herein.
Semester : It is a period of study consisting of 15 to 18 weeks of academic work equivalent to normally 90 working days including examination and preparation holidays. The odd Semester starts normally in July and even semester in December.
Semester End Examinations : It is an examination conducted at the end of a course of study.
Single Section Course : Course taught for a single section.
Social Service : An activity designed to promote *social* awareness and generate well-being; to improve the life and living conditions of the society.
Student Outcomes : The essential skill sets that need to be acquired by every student during her/his program of study. These skill sets are in the areas of employability, entrepreneurial, social and behavioral.
Substitution of Elective course : Replacing an elective course with another elective course as opted by the student.
Summer term : The term during which courses are offered from May to July.Summer term is not a student right and will be offered at the discretion of the University.
Term Paper : A 'term paper' is a research reportwritten by students that evolvestheir course based knowledge, accounting for a grade. Term paper is a written original research work discussing a topic in detail. It is a credit based course.
Under-loading : Registering for lesser number of credits than normally prescribed by the Program in a semester.
Withdraw from a Course : Withdrawing from a Course means that a student can drop from a course within the first two weeks of the odd or even Semester (deadlines are different for summer sessions). However s/he can choose a substitute course in place of it by exercising the option within 5 working days from the date of withdrawal.

CHAPTER 2

B.Tech. ENGINEERING PROGRAMS ON OFFER

B. TECH PROGRAMS

The students are admitted into 4- year full time B. Tech Programs as enlisted in this section. However these academic regulations provide various flexibilities in earning a) Honors b) Specialization and c) Minor Degrees listed out in the succeeding sections.

THE STUDENT IS AWARDED A B.TECH. DEGREE PROVIDED S/HE

a) Must successfully earn minimum of 157-170 credits, as stipulated in the program structure.
b) Must successfully complete a minimum of five (5) Professional Elective Courses, out of which three (3) must be from 3 different specialization areas offered by the program. However, in case of the program offering less than 3 specialization areas, s/he can complete more than one professional elective course from each of the specialization area but must ensure that s/he has completed a minimum of one course from each specialization area offered by the program.
c) Must successfully complete two (2) open electives courses
d) Must successfully undertake specific trainings in focused areas that enable students to be successful in their chosen career tracks. The focused areas are:(a) Employment in MNCs, (b) Civil Services (c) Higher Studies (d) Research and (e) Entrepreneurship.
e) Must successfully complete three (3) certificate courses (four (4) in case of CSE students) in discipline domain areas, in addition to one from yoga / sports & games / fine arts.
f) Must successfully complete the term paper and Minor Project.
g) Must successfully complete the industrial training (internship) of four weeks duration.
h) Must successfully complete Major project or practice school.
i) Must have successfully taken social service activities for a minimum duration of 30 hours starting from 3rd semester onwards
j) Must have successfully obtained a minimum CGPA of 4.5 at the end of the program.
k) Must have finished all the above-mentioned requirements in less than twice the period mentioned in the Academic structure for each program, which includes deceleration period chosen by the student, deceleration imposed by University or debarred from the University.

The following B.Tech. Degrees are offered by the University.

1. Bachelor of Technology in Biotechnology (BT)
2. Bachelor of Technology in Civil Engineering (CE)
3. Bachelor of Technology in Computer Science & Engineering (CSE)
4. Bachelor of Technology in Electronics and Communication Engineering (ECE)
5. Bachelor of Technology in Electrical and Electronics Engineering (EEE)
6. Bachelor of Technology in Electronics and Computer Engineering (ECM)
7. Bachelor of Technology in Mechanical Engineering (ME)
8. Bachelor of Technology in Petroleum Engineering (PE)

B.TECH DEGREE WITH HONORS

A student is eligible for B. Tech Degree with honors subject to the following.

a) S/he should have a CGPA of 8.5 or higher at the end of semester - 4.
b) S/he must pursue 5 additional courses, (covering not less than 20 credits) other than the courses required as per program, by separately registering for those courses.
c) S/he must pursue the additional courses by overloading during a semester or summer term.
d) S/he is eligible for the degree with honors only if CGPA of 8.5 or higher is maintained in each subsequent semester/term without attempting betterment after registering for Degree with Honors.

e) In case a student fails to meet the CGPA requirement for Degree with Honors at any point after registration, s/he will be dropped from the list of students eligible for Degree with Honors and they will receive B.Tech Degree only. However such students will receive a separate grade sheet mentioning the additional courses completed by them.

The following are the list of B.Tech(Honors) programs offered by the University

1.Bachelor of Technology (Honors) in Biotechnology (BT)
2.Bachelor of Technology (Honors) in Civil Engineering (CE)
3.Bachelor of Technology (Honors) in Computer Science & Engineering (CSE)
4.Bachelor of Technology (Honors) in Electronics and Communication Engineering (ECE)
5.Bachelor of Technology (Honors) in Electrical and Electronics Engineering (EEE)
6.Bachelor of Technology (Honors) in Electronics and Computer Engineering (ECM)
7.Bachelor of Technology (Honors) in Mechanical Engineering (ME)
8.Bachelor of Technology (Honors) in Petroleum Engineering (PE)

B.TECH DEGREE WITH SPECIALIZATION

A student is eligible to receive B. Tech Degree with specialization subject to the following:

a) S/he must successfully complete five (5) professional electives courses from a single specialized area and six (6) credits are earned by the student in addition to B. Tech Degree requirements,.
b) Must have completed term paper and Minor project in the same area of specialization; but this is to be done as part of the B. Tech Degree program requirement only
c) Attain a minimum CGPA of 6.75 at the end of the Program.

DEGREE WITH SPECIALIZATION IS OFFERED IN THE FOLLOWING AREAS:

Area of Specialization		**Eligible Departments**
1)	Bioinformatics	BT
2)	Genetic Engineering	BT
3)	Industrial and Food Bio Technology	BT
4)	Medical Bio Technology	BT
5)	Environmental and Water Resources Engineering	CE
6)	Geotechnical Engineering	CE
7)	Structural Engineering	CE
8)	Transportation Engineering	CE
9)	Software Engineering	CSE, ECM
10)	Networking &Communication	CSE, ECE, ECM
11)	Computational Intelligence	CSE, ECM
12)	Data Analytics	CSE, ECM
13)	Distributed & Cloud Computing	CSE, ECM
14)	e-Commerce	CSE, ECM
15)	Information Assurance & Security	CSE, ECM
16)	Internet of Things	CSE, ECM
17)	Platform- based Development	CSE, ECM
18)	Communication Systems	ECE, ECM
19)	Signal Processing	ECE, ECM, EEE
20)	VLSI	ECE, ECM, EEE
21)	Web Technologies	ECM, CSE
22)	Wireless Sensor Networks	ECM, CSE
23)	Embedded Systems	ECM, ECE, CSE, EEE

24)	Control Systems	EEE, ECE, ECM
25)	Energy Systems	EEE, ME
26)	Power Electronics	EEE
27)	Power Systems	EEE
28)	Automobile Engineering	ME
29)	Design & Manufacturing	ME
30)	Robotics & Mechatronics	ME, ECE, ECM, EEE
31)	Up-stream Engineering	PE
32)	Down-stream Engineering	PE

B.TECH DEGREE WITH A MINOR

A student who fulfills the B. Tech program requirements of a discipline in which s/he was admitted, is awarded a B.Tech degree in that discipline. The University also offers flexibility for a student to successfully complete five (5) additional courses (necessarily comprising of professional core courses category) from another discipline, which collectively accounts to 20 credits. Having done so s/he gets eligibility for the award of a minor degree in that discipline.

INTEGRATED B.TECH PROGRAMS

- B. Tech + M. Tech

  A student who fulfills all the B. Tech program requirements of a discipline in which s/he was admitted, is awarded a B.Tech degree in that discipline. The University also offers flexibility for a student to successfully complete all the requirements of a desired M. Tech degree program alongside the B. Tech degree program. However in such cases the minimum duration of study will be five years.

  The students seeking such degrees will have to exercise overloading of courses during semesters or can register and successfully complete required additional courses during consecutive summer terms starting from the intermittent summer between fourth and fifth semesters.

  The Project work undertaken by the students as part of the B. Tech program requirements will have to be extended to a higher level as part of M. Tech program requirements but without deviating from the area of the discipline in which M.Tech. program is being pursued. In such cases the student will have to submit the project requirements only at the M. Tech level but has to continuously get evaluated and assessed as part of the requirements of B. Tech, M. Tech.

- B. Tech + MBA

  A student who fulfills all the B. Tech program requirements of a discipline in which s/he was admitted, is awarded a B.Tech degree in that discipline. The University also offers flexibility for a student to successfully complete all the requirements of a desired MBA degree program alongside the B. Tech degree program. However in such cases the minimum duration of study will be five years.

  The students seeking such degrees will have to exercise overloading of courses during semesters or can register and successfully complete required additional courses during consecutive summer terms starting from the intermittent summer between fourth and fifth semesters.

  The Project work undertaken by the students as part of the B. Tech program requirements will be considered for fulfilment of B. Tech program requirements only. However such students will have to undertake a separate project in the Business Administration discipline to meet the requirements of MBA Program, Such type of projects will be allowed to be undertaken only after the completion of 9^{th} semester.

CHAPTER 3

ELIGIBILITY CRITERIA FOR ADMISSION INTO B.Tech. PROGRAMS

Candidates should have passed Intermediate or equivalent (10+2) Examination, from recognized school leaving certificate examination boards; with minimum of 60% marks or equivalent CGPA in Mathematics, Physics, and Chemistry in the case of all Engineering programs. In case of Bio Technology, the candidates who have passed with minimum of 60% or equivalent CGPA in Biology, Physics, and Chemistry are also eligible.

Apart from the above, the candidates should have secured a qualifying rank in the engineering admission eligibility test i.e., KLUEEE (Entrance Examination conducted by K L University) (or) EAMCET (or) JEE (Mains).

For foreign students who wish to study at the University, please refer to the "Foreign Student Admission Procedures" stated separately and comply with the study requirements of the Ministry of Human Resource Development, Govt.of India.

B.Tech PROGRAM CURRICULUM

For an academic program the curriculum is the basic framework that will stipulate the credits, category, course code, course title, course delivery (Lectures / Tutorials / Practice / Project/ Self Study / Capstone Design etc.), in the Choice Based Credit System. However all such are essentially designed, implemented and assessed on Outcome Based Education Framework.

PROGRAM STRUCTURE

a) B.Tech program is spread over a span of 8 semesters.

b) Each semester is of, approximately 18 weeks duration and each semester is classified as:
   - Odd Semester (July – December)
   - Even Semester (December/January – April/May).

c) In addition to the above mentioned semesters, the university may offer summer term during May and June.

d) All courses are offered under three categories vis-à-vis. even, odd and dual semester courses.

e) Subject to the maximum permissible limit in each course, as specified by the University from time to time, students have independence to choose courses of their own choice prescribed by the University.

f) From 3rd Semester, onwards a student can register for a maximum of 7 credited courses or 26 credits (whichever is less), this however is other than audited and certificate courses per semester. This is not applicable when student exercises the overloading option (while doing project work/practice school/Minor degree/Honors degree program/specialization).

g) A student can choose Major Project/Practice school only during 7th or 8th semester.

COURSE STRUCTURE

a) Every course has a Lecture-Tutorial-Practice (L-T-P) component attached to it.
b) Based upon the LTP structure the credits are allotted to a course using the following criteria.
   i. Every lecture hour is equivalent to one credit.
   ii. Every Tutorial/Practice hour is equivalent to half credit.
   iii. If the calculated value of credit is a fraction, it is rounded to the lower number.

COURSE CLASSIFICATION

Any course offered under B.Tech program is classified as:

a) COMPULSORY COURSES

1. Basic Sciences
2. Engineering Sciences
3. Humanities
4. Professional core

b) **ELECTIVE COURSES*:***

1.Professional Elective
2.Open elective
3. Management elective
4. Humanities and Social science Elective
5. Science elective

COURSE PRECEDENCE:

a) Every course can have one or more of its preceding course(s) as prerequisite(s).
b) To register for a course, the student must successfully complete the course(s) earmarked as pre-requisite(s) for that course.
c) In any course if a student appears for semester end exam or is declared eligible for the same, s/he is deemed to have met the prerequisite.
d) The Dean Academics after consulting with Department concerned has the prerogative to waive the prerequisite (if it is satisfied through a test) if the student has gained sufficient proficiency to take up the course.
e) Professional electives and compulsory core courses can be chosen by the students of the respective disciplines only. However, the students of a particular discipline can register for specialization/ discipline / interdisciplinary minor / compulsory discipline courses of other disciplines provided they have met the pre-requisite or when pre requisite is waived by Dean Academics.
f) A student is not permitted to choose an open elective, if it covers more than 30% of content already done by him in any other course that s/he registered/ completed.
g) An elective course may be offered, only if a minimum of 20 students register for the course.

SUMMER TERM COURSES

The University may offer summer term courses, as per the necessity from time to time.

a) A student may register for course/s in each summer term by paying the stipulated fee. Students registering for more than one (1) summer course have to ensure that there is no clash in the time table. In any case, a student can register only for a maximum of 14 credits during summer term.
b) Summer course is not a right of the student and will be offered based on availability of faculty and other institute resources.

EVALUATION PROCESS

A student's academic progress is examined through one or more of the following methods as decided by the Course Coordinator and duly approved by the Dean, Academic.

- Assignment
- Quiz
- Sessional
- Project Report
- Review
- Seminar
- Group Discussion
- In Class Participation / Active Learning
- Case Study Report

- Capstone Design Project
- Simulation
- Comprehensive Exam

a) The Sessional tests and the Semester-End Examinations will be conducted as per the Academic Calendar.

b) As per the necessity, the Supplementary examinations will be conducted at the discretion of Vice Chancellor.

c) Students may have to take more than one examination in a day either during Semester End Examinations /Supplementary examination.

IN-SEMESTER EVALUATION

a) The process of evaluation should be continuous throughout the semester and involves components as listed in section 5.0.
b) The maximum distribution of marks for In-Semester evaluation must not exceed 50% of aggregate marks of the course.
c) The distribution of weightage for various evaluation components will be decided and notified by the course coordinator through the course handout after approval by the Dean Academic, at the beginning of the semester.
d) In order to maintain transparency in evaluation, answer scripts will be shown to the students for verification, within one week of conduct of exam. If there is any discrepancy in evaluation, the student can request the course coordinator to re-evaluate.
e) The solution key and scheme of evaluation for all examinations will be displayed in the appropriate web portal of the course, within 2 days after the conduct of examination, by the course coordinator.
f) No correction is permitted once the course coordinator submits the marks/grades to the Controller of Examination.
g) In case the student is unable to appear for any such examination owing to medical grounds, participation in extra/ co curricular activities representing University/ state/ country; make up examination may be conducted as per the discretion of the Director / Principal of concerned College/ school.

ATTENDANCE POLICY:

In every course, student has to maintain a minimum of 75% attendance to be eligible for appearing in Semester end examination of the course, for cases of medical issues and other unavoidable circumstances the students will be condoned if their attendance is between 65% to 75% in every course,subjected to submission of medical certificates, medical case file and other needful documents to the concerned departments. However in case of a student having less than 65% attendance in any course, S/He shall be detained in the course and in no case such process will be relaxed.

There are no specific marks attached to attendance as such, however if the course coordinator of a course desires to award certain marks, for attendance in a course She/He can do so based on following guidelines, which thereby must be clearly reflected in respective course handouts, well before the commencement of the course work for such courses, which must be duly approved by the Dean Academic:For any course, not more than 5% marks can be allotted for attendance.
The distribution of marks is as follows:

95 to 100%	:	5 marks
90 to 95%	:	4 marks
85 to 90%	:	3 marks
80 to 85%	:	2 marks
75 to 80%	:	1 marks

Below 75% (even in case of condonation "0" marks)

The marks, if allotted for attendance will have to be considered for all L-T-P components of a course cumulatively but not specifically for theory component for any course, however if the course is an elective, then the marks are for only theory owing to the L-T-P structure for such course being "X"-0-0.

DETENTION POLICY

a) In any course, a student has to maintain a minimum of 75% attendance and must secure a minimum of 40% marks in In-Semester Examinations to be eligible for appearing to the Semester End Examination, failing to fulfill these conditions will deem such student to have been detained in that course.
b) However the following are the special cases where the lack of attendance can be condoned:
    i. Up to a maximum of 10% on medical grounds, in which case the student must submit the medical certificate from any recognized medical practitioner.
    ii. Up to a maximum of 10% if the student represents the University / State / Country in any Extra / Co-curricular activities.
    iii. The maximum extent to which a student can be condoned is 10%, and any student with less than 65% is deemed to be detained.

SEMESTER END EXAMINATION

a) The minimum weightage for Semester End Examination is 50% of the aggregate marks in the ratio of credits allotted for Lecture (L) +Tutorial (T) to Practical (P).
b) The pattern and duration of such examination will be decided and notified by the Course Coordinator through the Course handout, after approval from the Dean Academic.
c) In order to maintain transparency in evaluation, answer scripts will be shown to the students for verification upon request. If there is any discrepancy in evaluation, the student can request the course coordinator to re-evaluate.

REPORTS/GRADES

GRADING PROCESS

a) At the end of all evaluation components based on the performance of the student, each student is awarded based on ***absolute grading system***. The list of absolute grades and its connotation are given below:

GRADE	GRADE POINTS	**RANGE**	
O (Outstanding)	10	85	100
A+(Excellent)	9	80	<85
A(Very Good)	8	65	<80
B+(Good)	7	60	<65
B(Above Average)	6	50	<60
C(Average)	5	45	<50
P (Pass)	4	40	<45
F(Fail)	0	<40	-
Ab (Absent)	0	-	-

b) The SGPA is the ratio of sum of the product of the number of credit s with the grade points scored by a student in all the courses and the sum of the number of credits of all the courses undergone by a student, in a semester.
    i.e SGPA (S_i) = $\sum(C_i \times G_i) / \sum C_i$

where *'C_i'* is the number of credits of the i^{th} course and *'G_i'* is the grade point scored by the student in the i^{th} course.

c) 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 program,
   i.e. $CGPA = \sum(C_i \times S_i) / \sum C_i$
where 'S'_i is the SGPA of the i^{th} semester and *'C_i'* is the total number of credits in that semester.

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

e) CGPA can be converted to percentage of marks : 10 X CGPA - 7.5

f) A student get in less than 40% of overall score and 40% in the semester end examination will be considered to have earned "F" grade. Combined Theory and Lab courses the student should get independently 40% in both theory and lab components else treated as failed in both. A student who obtains 'F' grade has to reappear for all the components of Semester End examination.

g) Audit/Certificate courses are graded as satisfactory or non-satisfactory only.

h) At the end of each semester, the University issues grade sheet indicating the SGPA and CGPA of the student. However, grade sheet will not be issued to the student if he/she has any outstanding dues.

BETTERMENT

a) A student may reappear for semester end examination only in the theory part of the course for improving the grade, subject to the condition that, her/his CGPA is ≤ 6.75. In the case of reappearing, the grade obtained in reappearance or the earlier grade whichever is better will be considered.

b) A Student can re-register in any course at any time before the completion of his/her program provided the University permits.

c) A student cannot reappear for semester end examination in courses like Industrial Training, courses with their L-T-P Structure 0-0-X, Minor Project, Major Project, Practice School and Term Paper.

d) The student ceases to be eligible for award of B.Tech. degree with Honors, B.Tech degree with First class and distinction, in case s/he takes up the betterment option.

REGISTRATION PROCESS

For every course, the student has to undertake the registration process prior to commencement of the course-work, based on the following conditions;

a) Registration into a course will be permitted only for such courses, which are offered by the program in that particular semester.

b) In case a course has pre-requisites, all of them must be fulfilled.

c) The University has the right to refuse registration process if a student does not turn up on the day of registration.

d) Registration shall not be permitted after the fifth working day from the scheduled date of commencement of classes.

e) Students can register for a maximum of 26 credits in a semester of their choice to meet their program requirements.

f) In case of students, who wish to register for more credits through Overloading or less credits through Under-loading, have to seek prior permission from Dean-Academic.

g) Students, who have opted for minor degree, Honors program or degree with specialisation, can register for more number of credits in a Semester through Overloading.

h) The University reserves the right to withdraw any elective course offered within one week of the commencement of the semester if sufficient numbers of students have not registered or for any other reasons. In such cases, the students are permitted to register for any other elective course of their choice provided they have fulfilled the eligibility conditions.

i) The University reserves the right to cancel the registration of a student from a course or a semester or debar from the degree on disciplinary grounds.

j) Within one week of the commencement of the semester, a student is permitted to substitute an elective course subject to availability with prior approval from Dean-Academic. However, a student is not permitted to withdraw from compulsory course and substitute the same with an elective course.
k) A student is solely responsible to ensure that all conditions for proper registration are satisfied, and there are no timetable clashes. The registration may be cancelled for a course or the entire semester either by the student or by the University if any irregularity is found at a later stage.

CHANGE OF BRANCH

A student admitted to a particular Branch of the B.Tech program will normally continue studying in that branch until the completion of the program. However, in special cases the University may permit a student to change from one branch to another after the second semester, provided s/he has fulfilled admission requirement for the branch into which the change is requested.

The rules governing change of branch are as listed below:

a) Top 1% (based on CGPA until 2nd semester) students will be permitted to change to any branch of their choice.
b) Apart from students mentioned in clause (a) above, those who have successfully completed all the first and second semester courses and with CGPA ≥ 8 are also eligible to apply, but the change of Branch in such case is purely at the discretion of the University.
c) All changes of Branch will be effective from third semester. Change of branch shall not be permitted thereafter.
d) Change of branch once made will be final and binding on the student. No student will be permitted, under any circumstances, to refuse the change of branch offered.

CREDIT TRANSFER

a) Credit transfer from other University to K L University or vice versa is permitted only for under graduate program.
b) Credit transfer from K L University to other University: Student studying in K L University can take transfer to another University under the following conditions:

i. K L University has signed MOU with the University.
ii. However, a student, after seeking transfer from K L University can return to K L University after a semester or year. Based on courses done in the other University, equivalent credits shall be awarded to such students.

c) Credit transfer from another University to KL University: A student studying in another University can take transfer to K L University under the following conditions:

i. When a student seeks transfer, equivalent credits will be assigned to the student based on the courses studied by the student.
ii. The student, when transferred from other Universities, has to stick to the rules and regulations of K L University.
iii. To graduate from K L University, a student must study at least half of the minimum duration prescribed for a program at KLU.

ACADEMIC COUNSELING BOARD (ACB)

Academic Counseling Board is constituted by the Dean, Academic, for each program separately. This board shall comprise of the Chairman, Board of Studies, of the relevant program, two (2) Professors and two (2) Associate Professors.

A student will be put under Academic Counseling Board in the following circumstances:

(i) Has CGPA of less than 6.00.
(ii) Has 'F' grade in multiple courses.

The students under Academic Counseling Board may not be allowed to register for all regular courses in the semester, based on the recommendation of Academic Counseling Board and decision of Dean, Academic.

BACKLOG COURSES

A course is considered to be a backlog if the student has obtained 'F' grade in the course; the student has to re-appear for all components of semester end examinations in that course. However, student must successfully complete such a course in a maximum of four (4) consecutive attempts, failing which s/he must re-register for that course or a substitute course. The decision for substitute course shall be obtained from the Dean, Academic, based on the recommendations of the Board of Studies.

RUSTICATION

A student may be rusticated from the University on disciplinary grounds, based on the recommendations of any committee or examination committee, by the Vice Chancellor.

AWARD OF DEGREES

A student having cleared all the courses and met all the requirements for the award of degree with

1) CGPA between 4.5 to 5.5 will be awarded Pass class
2) CGPA < 6.75 will be awarded second class
3) CGPA ≥ 6.75 will be awarded first class
4) CGPA ≥ 7.5 will be awarded first class with distinction provided the student has cleared all the courses in first attempt, and must have fulfilled all the program requirements in four (4) years duration.

AWARD OF MEDALS

University awards Gold and silver medals to the top two (2) students based on CGPA. However,

1. the grade obtained by betterment, will not be considered for this award.
2. s/he must have obtained first class with distinction for the award of Gold or Silver medal.

Any of the above rules can be altered at the discretion of the Vice Chancellor in special situations.

CHAPTER 4

PROGRAM EDUCATIONAL OBJECTIVES (PEOs) AND PROGRAMOUTCOMES (POs)

PROGRAM EDUCATIONAL OBJECTIVES (PEOS) :

To be a globally renowned university, as per our vision, we need to produce quality products (graduates) into the market who have potential strengths to meet all the professional and personal challenges prevailing at global levels and who can serve in all the possible positions of their respective job domains and contribute towards holistic growth of their respective employment providers as well as the nation, world. The graduates must also possess cutting edge R&D skills in their domain areas.

This, is exactly what has been framed into the University's Mission and thereby the Mission has converged into the following **Program Educational Objectives (PEOs)** which are best suited to Undergraduate Engineering programs, and are those that compliment the university vision, mission.

A. Practice engineering in a broad range of industrial, societal and real world applications.
B. Pursue advanced education, research and development, and other creative and innovative efforts in science, engineering, and technology, as well as other professional careers.
C. Conduct themselves in a responsible, professional, and ethical manner.
D. Participate as leaders in their fields of expertise and in activities that support service and economic development throughout the world.

These PEOs are designed to be attained by all the graduates within 3 to 5 years of their graduation.

PROGRAM OUTCOMES(POs):

PO Number	Description
1. **Engineering Knowledge**	An abilitytoapplyknowledge ofmathematics,science, engineering fundamentals and an engineering specialization for the solution of complex engineering problems in engineering
2. **Problem Analysis**	An ability to identify, formulate, research literature, analyze complex engineering problems in mechanical engineering using first principles of mathematics, natural sciences and engineering sciences
3. **Design/ development of solutions**	An ability to design solutions for complex engineering problems and system component or processes that meet the specified needs considering public health & safety and cultural, societal & environment
4. **Conduct investigations of complex problems**	An ability to use research-based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of the information to obtain solutions to engineering problems
5. **Modern tool usage**	Ability to create, select and apply appropriate techniques, resources and modern engineering activities, with an understanding of the limitations
6. **The engineer and society**	Ability to apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice

PO Number	Description
7. **Environment and sustainability**	Ability to demonstrate the knowledge of engineering solutions, contemporary issues understanding their impacts on societal and environmental contexts, leading towards sustainable development
8. **Ethics**	An ability to apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice
9. **Individual and team work**	An ability to function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings
10. **Communication**	Ability to communicate effectively oral, written reports and graphical forms on complex engineering activities
11. **Project management and finance**	Ability to demonstrate knowledge and understanding of the engineering and management principles and apply those one's own work, as a member and leader in team, to manage projects and in multi-disciplinary environments
12. **Lifelong learning**	An ability to recognize the need for and having the preparation and ability to engage independent and life-long learning in broadest context of technological change

PROGRAMME SPECIFIC OUTCOMES (PSOs)

Bio Technology	
PSO 1	Graduates will be able design, perform experiments, analyze and interpret data for investigating complex problems in biotechnology Engineering and related fields.
PSO 2	Graduates will be able to justify societal, health, safety and legal issues and understand his responsibilities in biotechnological engineering practices.
Civil Engineering	
PSO 1	Function as design consultants in construction industry for the design of civil engineering structures.
PSO 2	Provide sustainable solutions to the Civil Engineering Problems.
Computer Science & Engineering	
PSO 1	An ability to design and develop software projects as well as Analyze and test user requirements.
PSO 2	An Ability to gain working Knowledge on emerging software tools and technologies.
Electronics and Communication Engineering	
PSO 1	An ability to Understand the theoretical and mathematical concepts to analyze real time problems.
PSO 2	An Ability to Design and Analyze systems based on the theoretical and Practical Knowledge
Electronics and Computer Engineering	
PSO 1	An ability to solve complex Electronics Engineering problems, using latest hardware and software tools, to arrive cost effective and appropriate solutions in the domain of embedded systems and Internet of Things.
PSO 2	An ability to demonstrate basic knowledge of Web Technologies for development of web based applications along with knowledge and skill related to cyber security.
Electrical and Electronics Engineering	
PSO 1	Knowledge and hands on competence in simulating, developing, Testing, operation and maintenance of Electrical & Electronics systems.
PSO 2	Able to work in multi disciplinary environments with knowledge on Electrical and Electronics domain and in Project Management techniques, environmental issues and Green technologies.
Mechanical Engineering	
PSO 1	An ability to demonstrate the knowledge, skill to analyze the cause and effects on machine elements, processes and systems.
PSO 2	An ability to apply the acquired Mechanical Engineering knowledge for the advancement of society and self.
Petroleum Engineering	
PSO 1	An ability to understand the basic components of petroleum exploration and production operations.
PSO 2	An ability to analyze and design solutions for petroleum engineering operations.

CHAPTER 5

COURSE STRUCTURE

2017-18 COURSE STRUCTURE																			
											Credits								
SNO	COURSE CODE	COURSE NAME	L	T	P	S	Cr	CH	Pre-requisite	OFFERED TO	BT	CE	CSE	ECE	ECM	EEE	ME	PE
HUMANITIES & SOCIAL SCIENCES																			
1	17EN1201	Building Blocks for Commmunication Skills	0	0	4	0	2	4	Nil	BT, CE, CSE, ECE, ECM, EEE, ME,PE	2	2	2	2	2	2	2	2
2	17EN3102	Instant Communication Skills	0	0	4	0	2	4	Nil	BT, ECE, ECM, EEE, ME,PE	2			2	2	2	2	2
3	17UC2204	Aptitude Builder - 1	0	0	4	0	2	4	Nil	BT, CE, CSE, ECE, ECM, EEE, ME,PE	2	2	2	2	2	2	2	2
4	17UC3105	Aptitude Builder - 2	0	0	4	0	2	4	Nil	BT, CE, CSE, ECE, ECM, EEE, ME,PE	2	2	2	2	2	2	2	2
5	17UC0010	Universal Human Values & Professional Ethics	2	0	0	0	2	2	Nil	ME, CE, EEE		2				2	1	
6	17EN2103	Professional communication Skills	0	0	4	-	2	4	Nil	BT, CE,ECM, PE	2	2			2			2
7	17UC0007	Indian Heritage and Culture	2	0	0	-	0	2	Nil	BT, CE, CSE, ECE, ECM, EEE, ME,PE								
8	17UC0008	Indian Constitution	2	0	0	-	2	2	Nil	BT,CE	2	0						
9	17UC0008	Indian Constitution	0	0	2	0	1	2	Nil	CSE			1					
10	17UC0009	Ecology and Environment	2	0	0	-	2	2	Nil	BT, CE, CSE, ECE, ECM, EEE, ME,PE	2	0	2	0	2	2	2	2
11	17MB4057	Economics for Engineers	2	0	0	0	2	2	Nil	ME							2	
12	17EN3203	Corporate Communication Skills	0	0	4	0	2	2	Nil	CSE, PE	2		2					2
13	17 PE 4121	Health, Safety & Environment in Petroleum Industry	3	0	0	0	3	3	Nil	PE								3
14	17AC1001	Indian Heritage and Culture	0	0	2	0	0	2	Nil	ME								
15	17AC1002	Indian Constitution	1	0	0	0	0	1	Nil	ME								
16	17AC1003	Environment and Sustainability	2	0	0	0	0	2	Nil	ME, EEE								

17	17AC1004	Gender Sensitization	2	0	0	0	0	2	Nil	ME, EEE								
18	17UC3206	Campus to Corporate	0	0	4	0	2	4	Nil	ECM					2			
19	17AC1008	Universal Human Values & Professional Ethics	2	0	0	0	0	0	Nil	ECE,ECM					0			
Total Credits											**16**	**10**	**11**	**8**	**14**	**12**	**13**	**17**
BASIC SCIENCES																		
1	17MT1205	Basic Mathematics	3	0	2	0	4	5		BT	4							
2	17MT2011	Biostatistics	2	1	0	0	3	3		BT	3							
3	17BT1001	Biology for Engineers	2	0	0	-	2	2		CE, ECE		2		2				
4	17CY1001	Engineering chemistry	3	0	2	-	4	5		BT, CE, CSE, ECE, ECM, EEE, ME,PE	4	4	4	4	4	4	4	4
5	17PH4001	Quantum physics for the Computer Science Engineers	3	0	0	0	3	3		CSE			3					
6	17MT1101	Single variable calculus and matrix algebra	3	0	2	-	4	5		BT, CE, CSE, ECE, ECM, EEE, ME,PE	4	4	4	4	4	4	4	4
7	17MT1102	Foundations of computational mathematics	3	0	0	-	3	3		BT, CE, CSE, ECE, ECM, EEE, ME,PE	3	3	3	3	3	3	3	3
8	17MT1203	Multivariate calculus	3	0	2	-	4	5		CE, CSE, ECE, ECM, EEE, ME,PE		4	4	4	4	4	4	4
9	17MT2010	Complex variables and transforms	3	0	0	0	3	3		PE								3
10	17MT1204	Logic and reasoning	3	0	0	-	3	4		BT, CE, CSE, ECE, ECM, EEE, ME,PE	3	3	3	3	3	3	3	3
11	17MT2104	Probability and optimization techniques	3	1	0	-	4	4		CE		4						
12	17MT2005	Probability and statistics	2	1	0	0	3	3		CSE			3					
13	17PH1001	Engineering materials	3	0	2	-	4	5		BT, CE, CSE, ECE, ECM, EEE, ME,PE	4	4	4	4	4	4	4	4
14	17MT2009	Probability and Stochastic Processes	2	1	0	0	3	3		ECE				3				
15	17MT2012	Theory of Differential Equations for Engineering and Mechanics	2	0	2	0	3	4		ME							3	
16	17MT2009	Probability and Numerical Methods	3	0	0	0	3	3		PE								3
Total Credits											**25**	**28**	**28**	**27**	**22**	**22**	**25**	**28**
ENGINEERING SCIENCES																		
1	17ME1001	Engineering Mechanics	3	0	2	0	4	5		BT, CE, CSE, ECE,	4	4	4	4	4	4	4	4

										ECM, EEE, ME,PE								
2	17CS2004	Object Oriented Programming	3	0	2	0	4	5	17CS 1101	BT, CSE, ECE, ECM, EEE, PE	4		4	4	4	4		4
3	17CS1102	Data Structures	3	0	2	0	4	5	NIL	CSE, ECE, ECM, EEE			4	4	4	4		
4	17ME1003	Workshop Practice	0	0	2	0	1	2		BT, CE, CSE, ECE, ECM, EEE, ME,PE	1	1	1	1	1	1	1	1
5	17CS1101	Problem Solving and Computer Programming	2	4	2	0	5	8	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE	5	5	5	5	5	5	5	5
6	17ME1002	Engineering Graphics	1	0	4	0	3	5		BT, CE, CSE, ECE, ECM, EEE, ME,PE	3	3	3	3	3	3	3	3
7	17GN1003	Basic engineering measurements	2	0	2	0	3	3		BT, CE, CSE, ECE, ECM, EEE, ME,PE	3	3	3	3	3	3	3	3
8	17GN1204	Coding Skills for Engineers (OE-1)	0	0	1 0	0	5	1 0	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE	5	5	5	5	5	5	5	5
9	17ES2103	Biochemical Thermodynamics	3	0	0	0	3	3		BT	3							
10	17ES2102	Transport Processes in Biological Systems	3	0	2	0	4	5		BT	4							
11	17BT2102	Process Engineering Principles	2	1	0	0	3	3		BT	3							
12	17CE1101	Introduction to civil engineering	2	0	2	0	3	4		CE		3						
13	17CE1201	Solid Mechanics	3	0	2	0	4	5		CE		4						
14	17CE2102	Mechanics of Fluids	3	0	2	0	4	5		CE		4						
15	17CE4101	Form Work	3	0	0	0	3	3	NIL	CE		3						
16	17CS1203	Introduction to CSE	2	0	2	0	3	4	NIL	CSE			3					
17	17CS2103	Discrete Mathematics	2	1	0	0	3	3	NIL	CSE, ECM, ECE			3	3	3			
18	17EC2102	Digital System Design	3	0	2	0	4	5		CSE, ECM			4		4			
19	17ME1104	Introduction to Mechanical Engineering	2	0	2	0	3	4	NIL	ME							3	
20	17ME2005	Computational Thinking and Data Sciences	2	0	2	0	3	4	NIL	ME							3	
21	17ME2206	Numerical Computation for Mechanical Engineers	1	2	2	0	4	5	NIL	ME							4	
22	17EM1101	Introduction to ECSE Engineering	2	0	2	0	3	4		ECM					3			
23	17EM2202	Signals and Systems	3	0	2	0	4	5		ECM					4			
24	17EE1101	Introduction to Electrical and Electronics Engineering	2	0	2	0	3	4		EEE						3		

25	17EE2103	Electromagnetic Fields	3	1	0	0	4	4		EEE						4			
26	17EE2104	Network Theory	3	0	2	0	4	5		EEE						4			
27	17EE2105	Electrical Circuit Theory	3	1	0	0	4	4		ECE				4					
28	17EE2205	Circuits and Electronics	3	0	2	0	4	5	NIL	ME							4		
29	17EC1101	Introduction to Electronics Engineering	2	0	2	0	3	4		ECE				3					
30	17PE1101	Introduction to Petroleum Engineering	2	0	2	0	3	1		PE								3	
31	17PE2102	Momentum Transfer	2	2	2	0	4	3		PE								4	
32	17PE2103	Thermodynamics of Reservoir Fluids	3	1	0	0	4	3		PE								4	
Total Credits											**35**	**35**	**39**	**39**	**43**	**40**	**35**	**36**	
PROFESSIONAL CORE COURSES																			
1	17BT1201	CELL BIOLOGY	3	1	0	0	4	2	NIL	BT	4								
2	17BT2105	BIOCHEMISTRY	3	0	2	0	4	3	NIL	BT	4								
3	17BT2106	MICROBIOLOGY	3	0	2	0	4	3	NIL	BT	4								
4	17BT2107	BIOANALYTICAL TECHNIQUES	3	0	2	0	4	3	NIL	BT	4								
5	17BT2109	IMMUNOLOGY	3	0	2	0	4	3	NIL	BT	4								
6	17BT3110	BIOINFORMATICS	3	0	2	0	4	3	NIL	BT	4								
7	17BT3111	GENETIC ENGINEERING	3	0	2	0	4	3	NIL	BT	4								
8	17BT3112	FERMENTATION TECHNOLOGY	3	0	2	0	4	3	NIL	BT	4								
9	17BT3113	BIOCHEMICAL REACTION ENGINEERING	3	0	2	0	4	3	NIL	BT	4								
10	17BT3201	PLANT BIOTECHNOLOGY	3	0	2	0	4	3	NIL	BT	4								
11	17BT3202	DOWNSTREAM PROCESSING	3	0	2	0	4	3	NIL	BT	4								
12	17BT2108	MOLECULAR BIOLOGY	3	0	0	0	3	3	NIL	BT	3								
13	17CE2103	Engineering Geology	3	0	2	-	4	5	NIL	CE		4							
14	17CE2104	Structural Analysis	3	1	0	-	4	4	17 CE 1201	CE		4							
15	17CE2105	Surveying	3	0	2	-	4	5	NIL	CE		4							
16	17CE2206	Construction Materials and Concrete Technology	3	0	2	-	4	5	NIL	CE		4							
17	17CE2207	Building Planning and Construction	3	0	2	-	4	5	NIL	CE		4							

18	17CE2208	Environmental Engineering	3	0	2	-	4	5	NIL	CE		4							
19	17CE2209	Hydraulics and Hydraulic Machines	3	0	2	-	4	5	17CE 2102	CE		4							
20	17CE2210	Soil Mechanics	3	0	2	-	4	5	NIL	CE		4							
21	17CE3111	Foundation Engineering	3	0	2	-	4	5	17CE 2210	CE		4							
22	17CE3112	Design of Reinforced Concrete Structures	3	0	2	-	4	5	17CE 2104	CE		4							
23	17CE3113	Design of Steel Structures	3	1	0	-	4	4	NIL	CE		4							
24	17CE3115	Transportation Engineering	3	0	2	-	4	5	NIL	CE		4							
25	17CE3216	Quantity Surveying and Estimation	3	0	2	-	4	5	NIL	CE		4							
26	17CE3218	Water Resources Engineering	3	0	0	-	3	3	NIL	CE		3							
27	17CS2107R	SOFTWARE ENGINEERING	2	1	0	0	3	3	NIL	CSE			3						
28	17CS2208A	Operating Systems	4	0	4	0	6	6	NIL										
29	17CS2208R	Operating Systems	3	0	2	0	4	5	NIL	CSE			4						
30	17CS2209R	Computer Networks	3	0	2	0	4	5	NIL	CSE			4						
31	17CS2209A	Computer Networks (Advanced)	4	0	4	0	6	6	NIL										
32	17CS2210R	Database Management Systems	2	1	2	2	4	7	NIL	CSE,ECM			4		4				
33	17CS2210A	Database Management Systems (Advanced)	3	1	4	0	6	6	NIL										
34	17CS2210O	Database Management Systems (Optioanal)	2	0	4	0	4	4	NIL										
35	17EC2204	Computer Organization and Architecture	3	0	0	0	3	3		CSE,ECE, ECM			3	3	3				
36	17CS2212	Artificial Intelligence	2	0	2	4	4	8	NIL	CSE			4						
37	17CS3117	Microprocessors	3	0	2	0	4	5	NIL	CSE			4						
38	17CS3113R	Automata & Compiler Design	3	1	0	0	4	4	17CS 2103	CSE			4						
39	17CS3113A	Automata & Compiler Design (Advanced)	4	1	2	0	6	6	17CS 2103										
40	17CS3114R	Analysis & Design of Algorithms	3	0	2	4	5	9	17CS 2103	CSE			5						
41	17CS3115R	Distributed Computing	2	0	2	0	3	4	17CS 2208 R	CSE			3						

42	17CS3116R	Entreprise Programming	2	0	2	4	3.5	8	17CS 2004	CSE			3.5					
43	17EM2102	Electronic Devices and Circuits	3	0	2	0	4	5		ECM					4			
44	17EM2206	Web Application Development	3	0	2	0	4	5		ECM					4			
45	17CS2212	Artificial Intelligence	2	0	2	4	4	8	Nil	ECM					4			
46	17CS2107	Software Engineering	3	1	0	0	4	3	Nil	ECM					4			
47	17EM2203	Embedded Systems	3	0	2	0	4	5		ECM					4			
48	17EM2204	Computer Networks and Security	3	0	2	0	4	5		ECM					4			
49	17EM2205	LINEAR INTEGRATED CIRCUIT ANLAYSIS	3	0	2	0	4	5		ECM					4			
50	17EM3205	Fundamentals of Communication Systems	3	0	2	0	4	5		ECM					4			
51	17EM2102	Processors & Controllers	3	0	2	0	4	5		ECM, EEE					4	4		
52	17EC2103	Signals and Systems	3	0	2	0	4	5		ECE, EEE				4		4		
53	17EC2205	Digital Signal Processing	2	1	2	0	4	5		ECE				4				
54	17EC2206	Analog and Digital Communication	2	1	2	0	4	5		ECE				4				
55	17EC3107	Computer Networks	3	0	2	0	4	5		ECE				4				
56	17EC3108	Electronic System Design Workshop	2	0	4	0	4	6		ECE				4				
57	17EC3109	Processors and Controllers	2	1	2	0	4	5		ECE				4				
58	17EC2212	Electromagnetic Fields and Transmission Lines	3	0	0	0	3	3		ECE				3				
59	17EC2102	Digital System Design	3	0	2	0	4	5	Nil	ECE, EEE				4		4		
60	17EC2104	Analog Electronic Circuit Design	3	0	4	0	5	7	17 EC 2103	ECE, EEE				5		5		
61	17 EE 2207	Electrical Circuits	3	1	0	0	4	4	17 EE 2104	EEE						4		
62	17 EE 2206	DC Machines and Transformers	3	0	2	0	4	5	Nil	EEE						4		
63	17 EE 3101	Electrical Power Generation, Transmission & Distribution	3	1	0	0	4	4	Nil	EEE						4		
64	17 EE 3102	Power Electronics	3	0	2	0	4	5	17 EE 2207	EEE						4		
65	17 EE 3103	AC Rotating Machines	3	0	2	0	4	5	17 EE 2206	EEE						4		

66	17 EE 3104	Control Systems	3	0	2	0	4	5	Nil	EEE						4		
67	17 EE 3205	Power System Analysis & Stability	3	1	0	0	4	4	17 EE 3101	EEE						4		
68	17 EE 4101	Power System Protection & Control	3	0	2	0	4	5	17 EE 3205	EEE						4		
69	17ME2107	Machine drawing	0	0	4	0	2	4	17ME 1002	ME							2	
70	17ME2108	Thermal-Fluids Engineering-I	3	0	2	0	4	5	NIL	ME							4	
71	17ME2109	Mechanics and Materials-I	3	0	2	0	4	5	17ME 1001	ME							4	
72	17ME2110	Dynamics and Control-I	3	0	2	0	4	5	17ME 1001	ME							4	
73	17ME2211	Dynamics and Control-II	3	0	2	0	4	5	17ME 2110	ME							4	
74	17ME2212	Thermal-Fluids Engineering-II	3	0	2	0	4	5	17ME 2108	ME							4	
75	17ME2213	Mechanics and Materials-II	3	0	2	0	4	5	17ME 2109	ME							4	
76	17ME3114	Design and Manufacturing-I	3	0	2	0	4	5	17ME 2109	ME							4	
77	17ME3115	Engineering Management	3	0	0	0	3	3	NIL	ME							3	
78	17ME3116	Heat Transfer	3	0	2	0	4	5	17ME 2108	ME							4	
79	17ME3117	Finite Element Analysis of Solids and Fluids	3	0	2	0	4	5	17ME 2108, 17ME 2109	ME							4	
80	17ME3118	Introduction to Robotics	3	0	2	0	4	5	NIL	ME							4	
81	17ME3219	Design and Manufacturing-II	3	0	2	0	4	5	17ME 3114	ME							4	
82	17ME3220	Elements of Mechanical Design	2	0	2	0	3	4	17ME 2213	ME							3	
83	17 PE 2104	Petroleum Geology	3	0	2	0	4	3		PE								4
84	17 PE 2105	Drilling Engineering-I	3	1	0	0	4	3		PE								4
85	17 PE 2106	Surveying and Petroleum Geophysics	3	0	2	0	4	3		PE								4

86	17 PE 2207	Heat Transfer	2	2	2	0	4	4		PE									4
87	17 PE 2208	Petroleum Exploration Methods	3	0	0	0	3	4		PE									3
88	17 PE 2209	Drilling Engineering-II	2	2	2	0	4	4		PE									4
89	17 PE 3110	Mass Transfer	2	2	2	0	4	5		PE									4
90	17 PE 3111	Petroleum Reservoir Engineering	2	2	2	0	4	5		PE									4
91	17 PE 3112	Petroleum Production Engineering-I	3	0	0	0	3	5		PE									3
92	17 PE 3113	Offshore Petroleum Operations	3	0	0	0	3	5		PE									3
93	17 PE 3114	Petroleum Formation Evaluation	3	0	0	0	3	6		PE									3
94	17 PE 3215	Petroleum Production Engineering-II	3	0	2	0	4	6		PE									4
95	17 PE 3216	Oil and Gas Well Testing	3	0	0	0	3	5		PE									3
96	17 PE 3217	Petroleum Refining & Petrochemical Technology	3	0	2	0	4	6		PE									4
97	17 PE 3218	Petroleum Asset Management	3	0	0	0	3	6		PE									3
98	17 PE 4119	Petroleum Production Equipment Design	3	0	0	0	3	7		PE									3
99	17 PE 4120	Petroleum Reservoir Modelling and Simulation	2	2	2	0	4	7		PE									4
Total Credits											**47**	**55**	**41.5**	**39**	**43**	**49**	**52**		**61**
SKILLING COURSES																			
1	17TS1001	Biotechnology Skilling - 1 (Medical Coding)	0	0	0	8	2	8	NIL	BT	2								
2	17TS1002	Biotechnology Skilling - 2 (Instrumentation)	0	0	0	8	2	8	NIL	BT	2								
3	17TS1003	Biotechnology Skilling - 3 (Animal Cell Culture)	0	0	0	8	2	8	NIL	BT	2								
4	17TS1004	Technical Proficiency and Training - 1 (Genomics)	1	0	0	0	1	1	NIL	BT	1								
5	17TS1005	Biotechnology Skilling - 4 (Advanced Instrumentation)	0	0	0	8	2	8	NIL	BT	2								
6	17TS1006	Technical Proficiency and Training - 2 (Bioprocessing)	1	0	0	0	1	1	NIL	BT	1								
7	17TS2101	Skilling for Engineers 1 (Field Survey)	0	0	0	8	2	8	NIL	CE		2							
8	17TS2202	Skilling for Engineers 2 (Practical Approaches in Building Planning & Construction)	0	0	0	8	2	8	NIL	CE		2							

9	17TS3103	Skilling for Engineers 3 (Exploration of Structural Elements)	0	0	0	8	2	8	NIL	CE		2							
10	17TS3204	Skilling for Engineers 4 (Road Safety Audit)	0	0	0	8	2	8	NIL	CE		2							
11	17TS201	Skilling for Engineers-1 (Hacker Rank)	0	0	0	8	1	8	NIL	CSE			1						
12	17TS303	Skilling for Engineers-4 (Stream Based)	0	0	0	8	2	**8**	NIL	CSE			2						
13	17TS401	Technical Skilling-1 (Lab View and MultiSim)	0	0	0	6	1.5	6	NIL	ECE				1.5					
14	17TS402	Technical Skilling-2(Matlab) (Communications and DSP)	0	0	0	8	2	8	NIL	ECE				2					
15	17TS403	Technical Skilling-3 (VLSI-Xilinx-Vivado, ES-Keil&ARM, SP-Python, CS-Tems, IOT-Python, ML&AI-Keras)	0	0	0	8	2	8	NIL	ECE				2					
16	17TS404	Technical Skilling-4 (VLSI-Mentor Graphics, ES-Python& RasberriPie, SP-Python, CS-BTS simulators, IOT-Open CV, ML&AI-Tensor Flow)	0	0	0	6	1.5	6	NIL	ECE				1.5					
17	17TS405	Technical Skilling-5 (VLSI-Pspice or Cadence, ES-CC Studio, SP-VC++, CS-HFSS-CST, ML&AI-Spider)	0	0	0	6	1.5	8	NIL	ECE				1.5					
18	17TP3101	Technical Proficiency & Training -1	0	0	0	4	1	4	NIL	ECE				1					
19	17TP3202	Technical Proficiency & Training -2	0	0	0	8	2	8	NIL	ECE				2					
20	17TS5001	Sklling for Engineers-3 (Java)	0	0	8	0	4	8	NIL	ECM					4				
21	17TS502	Sklling for Engineers 4 (Python Programming)	0	0	0	8	2	8	NIL	ECM					2				
22	17TS503	Skilling for Engineers - 5 (Embedded C)	0	0	4	0	2	4	NIL	ECM					2				
23	17 TS 601	Technical Skill -1	0	0	0	8	2	8		EEE						2			
24	17 TS 602	Technical Skill -2	0	0	0	8	2	8		EEE						2			
25	17 TS 603	Technical Skill -3	0	0	0	8	2	8		EEE						2			
26	17 TS 604	Technical Skill -4	0	0	0	8	2	8		EEE						2			
27	17TS701	Skilling for Engineers-1 (Manufacturing Technologies)	0	0	0	8	2	8	NIL	ME							2		
28	17TS702	Skilling for Engineers-2 (Artificial Intelligence)	0	0	0	4	1	4	NIL	ME							1		

29	17TS703	Skilling for Engineers-3 (Problem Solving techniques in Thermal)	0	0	0	4	1	4	17ME 2108	ME							1	
30	17TS704	Skilling for Engineers-4 (Problem Solving techniques in Design)	0	0	0	4	1	4	17ME 2213	ME							1	
31	17TS705	Technical Proficiency & Training-1 (Data Analytics)	0	0	0	4	1	4	NIL	ME							1	
32	17TS706	Technical Proficiency & Training -2 (Machine Learning)	0	0	0	8	2	4	NIL	ME							2	
Total Credits											**10**	**8**	**3**	**11.5**	**8**	**8**	**8**	**0**
FLEXI CORE																		
1	FC 1	FLEXI CORE 1	3	0	2	0	4	5	17EC 2101	ECE				4				
2	FC 2	FLEXI CORE 2	3	0	2	0	4	5	17EC 2212	ECE				4				
Total Credits											**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**
COUNSELLING & CO-CURRICULAR																		
1	17GN2103	Counselling-1	0	0	1	0	0	1		BT, CE, CSE, ECE, ECM, EEE, ME,PE	0	0	0	0	0	0	0	0
2	17GN2204	Counselling-2	0	0	1	0	0	1		BT, CE, CSE, ECE, ECM, EEE, ME,PE	0	0	0	0	0	0	0	0
3	17GN3105	Counselling-3	0	0	1	0	0	1		BT, CE, CSE, ECE, ECM, EEE, ME,PE	0	0	0	0	0	0	0	0
4	17GN2109	Co-Curricular Activity	0	0	0	2	0.5	2		BT, CE, CSE, ECE, ECM, EEE, ME,PE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
5	17GN2210	Co-Curricular Activity	0	0	0	2	0.5	2		BT, CE, CSE, ECE, ECM, EEE, ME,PE	0.5	0.5	0	0	0.5	0.5	0.5	0.5
Total Credits											**1**	**1**	**0.5**	**0.5**	**1**	**1**	**1**	**1**
TERM PAPER & PROJECT																		
1	17IE2246	INDUSTRIAL TRAINING	0	0	4	0	2	4		BT, CE, CSE, ECE, ECM, EEE, ME,PE	2	2	2	2	2	2	2	2
2	17IE3247	TERM PAPER	0	0	4	0	2	4		BT, CE, CSE, ECE,	2	2	2	2	2	2	2	2

										ECM, EEE, ME,PE								
3	17IE4048	PROJECT (PART I)	0	0	0	24	6	24		BT, CE, CSE, ECE, ECM, EEE, ME,PE	6	6	6	6	6	6	6	6
4	17IE4049	PROJECT (PART II)	0	0	0	24	6	24		BT, CE, CSE, ECE, ECM, EEE, ME,PE								
5	17IE4050	PRACTICE SCHOOL	0	0	0	24	6	24		BT, CE, CSE, ECE, ECM, EEE, ME,PE	6	6	6	6	6	6	6	6
6	17IE4051	INTERNSHIP	0	0	0	24	6	24		BT, CE, CSE, ECE, ECM, EEE, ME,PE								
7	17PR3080	MID-GRAD CAPSTONE PROJECT	0	0	4	0	2	4		CSE			2					
Total Credits											**16**	**16**	**18**	**16**	**16**	**16**	**16**	**16**
OPEN ELECTIVES																		
1	OE-1	OPEN ELECTIVE-1	3	0	0	0	3	3		BT, CE, CSE, ECE, ECM, EEE, ME,PE	3		3	3	3	3	3	3
2	OE-2	OPEN ELECTIVE-2	3	0	0	0	3	3		BT, CE, CSE, ECE, ECM, EEE, ME,PE	3	3	3	3	3	3	3	3
3	OE-4	MANAGEMENT ELECTIVE	3	0	0	0	3	3		BT, CE, CSE, ECE, ECM, EEE, PE	3	3	3	3	3	3		3
4	OE-5	FOREIGN LANGAUGE ELECTIVE	2	0	0	0	2	2		BT, CE, CSE, ECE, ECM, EEE, ME,PE	2	2	2	2	2	2	2	2
Total Credits											**11**	**8**	**11**	**11**	**11**	**11**	**8**	**11**
PROFESSIONAL ELECTIVES																		
1	PE-1	PROFESSIONAL ELECTIVE-1	3	0	0	0	3	3		BT, CE, CSE, ECE, ECM, EEE, ME,PE	3	3	3	3	3	3	3	3
2	PE-2	PROFESSIONAL ELECTIVE-2	3	0	0	0	3	3		BT, CE, CSE, ECE, ECM, EEE, ME,PE	3	3	3	3	3	3	3	3
3	PE-3	PROFESSIONAL ELECTIVE-3	3	0	0	0	3	3		BT, CE, CSE, ECE, ECM, EEE, ME,PE	3	3	3	3	3	3	3	3
4	PE-4	PROFESSIONAL ELECTIVE-4	3	0	0	0	3	3		BT, CE, CSE, ECE, ECM, EEE, ME,PE	3	3	3	3	3	3	3	3
5	PE-5	PROFESSIONAL ELECTIVE-5	3	0	0	0	3	3		BT, CE, CSE, ECM, EEE, ME,PE	3	3	3		3	3	3	3
6	PE-6	PROFESSIONAL ELECTIVE-6	3	0	0	0	3	3		CSE, ECM			3		3			
7	PE-7	PROFESSIONAL ELECTIVE-7	3	0	0	0	3	3		CSE			3					
Total Credits											**15**	**15**	**21**	**12**	**18**	**15**	**15**	**15**

Grand Total Credits											**176**	**176**	**173**	**172**	**176**	**174**	**173**	**185**
FLEXI CORE																			
1	17EC3301	VLSI Design	2	1	2	0	4	5	17EC 2101	ECE				4				
2	17EC3302	RF System Design	3	0	2	0	4	5	17EC 2212	ECE				4				
3	17EC3303	Wireless Communication	3	0	2	0	4	5	17EC 2206	ECE				4				
4	17EC3304	AI, ANN & ML	3	0	2	0	4	5	NIL	ECE				4				
5	17EC3305	Electronic Instruments, Automation & Biomedical Applications	3	0	2	0	4	5	17EC 2205	ECE				4				
6	17EC3306	Information Theory & Coding	3	0	2	0	4	5	17EC 2206	ECE				4				
Professional Electives - Department wise - Streamwise																			
DEPARTMENT OF BIOTECHNOLOGY																			
GENETIC ENGINEERING																			
1	17BT3252	TRANSGENIC TECHNOLOGY	3	0	0	0	3	3	17BT 3111	BT								
2	17BT3253	MOLECULAR EXPRESSION TECHNOLOGY	3	0	0	0	3	3	17BT 3111	BT								
3	17BT3254	GENOMICS AND PROTEOMICS	3	0	0	0	3	3	17BT 3111	BT								
4	17BT4150	MOLECULAR MARKERS AND DIAGNOSTICS	3	0	0	0	3	3	17BT 3111	BT								
5	17BT4151	GENE AND THE ENVIRONMENT	3	0	0	0	3	3	17BT 3111	BT								
6	17BT4152	MICROBIAL GENETICS	3	0	0	0	3	3	17BT 3111	BT								
7	17BT4153	DNA FORENSICS	3	0	0	0	3	3	17BT 3111	BT								
INDUSTRIAL BIOTECHNOLOGY																			
1	17BT3256	PHARMACEUTICAL BIOTECHNOLOGY	3	0	0	0	3	3	17BT 2106	BT								
2	17BT3257	METABOLIC ENGINEERING	3	0	0	0	3	3	17BT 2106	BT								

3	17BT3258	BIORESOURCE TECHNOLOGY	3	0	0	0	3	3	17BT 2106	BT								
4	17BT4154	BIOPROCESS ECONOMICS AND PLANT DESIGN	3	0	0	0	3	3	17BT 2106	BT								
5	17BT4155	ENZYME ENGINEERING	3	0	0	0	3	3	17BT 2106	BT								
6	17BT4156	BIOPROCESS VALIDATION AND CGMP	3	0	0	0	3	3	17BT 2106	BT								
7	17BT4157	FOOD TECHNOLOGY	3	0	0	0	3	3	17BT 2106	BT								
8	17BT4158	PHARMACOVIGILANCE AND SAFETY	3	0	0	0	3	3	17BT 2106	BT								
BIOINFORMATICS																		
1	17BT3259	PERL AND BIOPERL PROGRAMMING	3	0	0	0	3	3	17BT 3110	BT								
2	17BT3260	BIOMEDICAL INFORMATICS	3	0	0	0	3	3	17BT 3110	BT								
3	17BT3261	MOLECULAR MODELLING AND DRUG DESIGN	3	0	0	0	3	3	17BT 3110	BT								
4	17BT3262	STRUCTURAL BIOLOGY	3	0	0	0	3	3	17BT 3110	BT								
5	17BT4160	APPLIED BIOINFORMATICS	3	0	0	0	3	3	17BT 3110	BT								
6	17BT4161	PYTHON AND R PROGRAMMING	3	0	0	0	3	3	17BT 3110	BT								
7	17BT4162	DATA BASE MANAGEMENT SYSTEM	3	0	0	0	3	3	17BT 3110	BT								
MEDICAL BIOTECHNOLOGY																		
1	17BT3263	STEM CELL TECHNOLOGY	3	0	0	0	3	3	17BT 2015	BT								
2	17BT3265	CANCER BIOLOGY	3	0	0	0	3	3	17BT 2015	BT								
3	17BT3266	NEUROBIOLOGY	3	0	0	0	3	3	17BT 2015	BT								
4	17BT4163	BIOELECTRONICS & BIOSENSORS	3	0	0	0	3	3	17BT 2015	BT								
5	17BT4164	TISSUE ENGINEERING	3	0	0	0	3	3	17BT	BT								

									2015									
6	17BT4165	VIROLOGY	3	0	0	0	3	3	17BT 2015	BT								
7	17BT4166	NANOBIOTECHNOLOGY	3	0	0	0	3	3	17BT 2015	BT								
DEPARTMENT OF CIVIL ENGINEERING																		
STRUCTURAL ENGINEERING																		
1	17 CE 3251	Prestressed Concrete	3	0	0	0	3	3	17 CE 3113	CE								
2	17 CE 4156	Advanced Design of reinforced Concrete Structures	3	0	0	0	3	3	17 CE 3112	CE								
3	17 CE 4157	Advanced Structural Analysis	3	0	0	0	3	3	17 CE 3112	CE								
4	17 CE 4158	Bridge Engineering	3	0	0	0	3	3	17 CE 3112	CE								
5	17 CE 4159	Earthquake Resistant Design of Structures	3	0	0	0	3	3	NIL	CE								
GEOTECHNICAL ENGINEERING																		
1	17 CE 3252	Ground Improvement Techniques	3	0	0	0	3	3	17 CE 2210	CE								
2	17 CE 4160	Advanced Foundation Engineering	3	0	0	0	3	3	17 CE 3111	CE								
3	17 CE 4161	Geotechnical Earthquake Engineering	3	0	0	0	3	3	17 CE 2210	CE								
4	17 CE 4162	Design of Earth Retaining Structures	3	0	0	0	3	3	17 CE 3111	CE								
5	17 CE 4163	Geo synthetics and reinforced soil structure	3	0	0	0	3	3	17 CE 3111	CE								
ENVIRONMENTAL ENGINEERING AND WATER RESOURCE ENGINEERING																		
1	17 CE 3253	Design of Hydraulics Structures	3	0	0	0	3	3	17 CE 2102	CE								
2	17 CE 4164	Advanced Water Resources Engineering	3	0	0	0	3	3	17 CE 2209	CE								
3	17 CE 4165	Environmental impact assessment	3	0	0	0	3	3	17 CE 2209	CE								
4	17 CE 4166	Solid waste management and landfills	3	0	0	0	3	3	NIL	CE								

5	17 CE 4167	Advanced Environmental Engineering	3	0	0	0	3	3	NIL	CE									
TRANSPORTATION ENGINEERING																			
1	17 CE 3254	Advanced Highway Engineering	3	0	0	0	3	3	17 CE 3115	CE									
2	17 CE 4168	Traffic Engineering	3	0	0	0	3	3	17 CE 3115	CE									
3	17 CE 4169	Advanced Pavement Design Engineering	3	0	0	0	3	3	17 CE 3115	CE									
4	17 CE 4170	Urban Transport Systems Planning	3	0	0	0	3	3	17 CE 3115	CE									
5	17 CE 4171	Railways, Docks, Harbors and airports	3	0	0	0	3	3	NIL	CE									
DEPARTMENT OF COMPUTER SCIENCE ENGINEERING																			
Software Engineering Specialization																			
1	17 CS 3131	Design Patterns	2	0	2	2	3.5	4	17 CS 2107	CSE,ECM									
2	17 CS 3132	Principles of Programming Languages	2	0	2	0	3	4	17 CS 2107	CSE,ECM									
3	17 CS 3133	Formal Methods & Requirements Engineering	2	0	2	0	3	4	17 CS 2107	CSE,ECM									
4	17 CS 3233	Visual Programming & HCI (UI & UX)	2	0	2	0	3	4	17 CS 2107	CSE,ECM									
5	17 CS 3234	Software Architecture & Design	2	0	2	0	3	4	17 CS 2107	CSE,ECM									
6	17 CS 3235	Software Fault Tolerance & Reliability	2	0	2	0	3	4	17 CS 2107	CSE,ECM									
7	17 CS 3236	Software Project Management	2	0	2	0	3	4	17 CS 2107	CSE,ECM									
8	17 CS 3037	Web Engineering	2	0	2	0	3	4	17 CS 2107	CSE,ECM									
9	17 CS 3038	Software Verification & Validation	3	0	2	0	4	4	17 CS 2107	CSE,ECM									
Computational Science Specialization																			
1	17 CS 3139	Modeling & Simulation for Sciences	2	0	2	0	3	3	17CS 3115	CSE,ECM									
2	17 CS 3140	Optimization & Game Theory	2	0	2	0	3	3	17CS	CSE,ECM									

									3115									
3	17 CS 3141	Graphics & Visualization	2	0	2	2	3.5	4	17CS 3115	CSE,ECM								
4	17 CS 3242	Parallel Algorithms	2	0	2	0	3	3	17CS 3115	CSE,ECM								
5	17 CS 3243	SCIENTIFIC COMPUTING	2	0	2	0	3	3	17CS 3115	CSE,ECM								
6	17 CS 3244	Advanced Computational Complexity & Algorithms	2	0	2	0	3	3	17CS 3115	CSE,ECM								
7	17 CS 3245	Digital Media Processing	2	0	2	0	3	3	17CS 3115	CSE,ECM								
8	17 CS 3046	DISCRETE EVENT SIMULATION	3	0	2	0	4	4	17CS 3115	CSE,ECM								
9	17 CS 3047	Rendering & Animation	2	0	2	0	3	3	17CS 3115	CSE,ECM								
Cloud Computing Specialization																		
1	17 CS 3148	Parallel Computing	2	0	2	0	3	3	17 CS 3251	CSE,ECM								
2	17 CS 3149	High Performance Computing	2	0	2	0	3	3	17 CS 3251	CSE,ECM								
3	17 CS 3150	Advanced Computer Architecture	2	0	2	0	3	3	17 CS 3251	CSE,ECM								
4	17 CS 3251	Cloud Computing	2	0	2	0	3	3	NIL	CSE,ECM								
5	17 CS 3252	Cloud Networking	2	0	2	0	3	3	17 CS 3251	CSE,ECM								
6	17 CS 3253	Cloud systems & infrastructure	3	0	2	0	4	4	17 CS 3251	CSE,ECM								
7	17 CS 3254	Advanced Operating Systems	2	0	2	2	3.5	4	17 CS 3251	CSE,ECM								
8	17 CS 3055	Distributed File Systems	2	0	2	0	3	3	17 CS 3251	CSE,ECM								
9	17 CS 3056	Fog Computing	2	0	2	0	3	3	17 CS 3251	CSE,ECM								

Big Data Analytics Specialization																			
1	17 CS 3157	Information Storage & Retrieval	2	0	2	0	3	3	17CS2 210R	CSE,ECM									
2	17 CS 3158	Advanced Databases	2	0	2	0	3	3	17CS2 210R	CSE,ECM									
3	17 CS 3159	Data Warehousing & Mining	2	0	2	0	3	3	17CS2 210R	CSE,ECM									
4	17 CS 3260	Introduction to Graph and Web Analytics	2	0	2	0	3	3	17CS2 210R	CSE,ECM									
5	17 CS 3261	Data Science using R	2	0	2	2	3.5	4	17CS2 210R	CSE,ECM									
6	17 CS 3262	Data Modelling & Visualization	2	0	2	0	3	3	17CS2 210R	CSE,ECM									
7	17 CS 3263	Cognitive Computing	3	0	2	0	4	4	17CS2 210R	CSE,ECM									
8	17 CS 3064	Big Data Optimization	2	0	2	0	3	3	17CS2 210R	CSE,ECM									
9	17 CS 3065	Big Data Anlaytics	2	0	2	0	3	3	17CS2 210R	CSE,ECM									
Artificial Intelligence Specialization																			
1	17 CS 3166	Machine Learning	2	0	2	2	3.5	4	17CS2 212	CSE,ECM									
2	17 CS 3167	Natural Language Processing	2	0	2	0	3	3	17CS2 212	CSE,ECM									
3	17 CS 3168	Computer Vision & Perception	2	0	2	0	3	3	17CS2 212	CSE,ECM									
4	17 CS 3269	Multi-agent Systems	2	0	2	0	3	3	17CS2 212	CSE,ECM									
5	17 CS 3270	Soft Computing	2	0	2	0	3	3	17CS2 212	CSE,ECM									
6	17 CS 3271	Pattern Recognition	2	0	2	0	3	3	17CS2 212	CSE,ECM									
7	17 CS 3272	Cognitive Computing	2	0	2	0	3	3	17CS2 212	CSE,ECM									
8	17 CS 3073	Robotics	2	0	2	0	3	3	17CS2	CSE,ECM									

									212									
9	17 CS 3074	Deep Learning and Expert Systems	2	0	2	0	3	3	17CS2212	CSE,ECM								
Cyber Security Specialization																		
1	17 CS 3175	Cryptanalysis & Cyber Defence	2	0	2	0	3.5	4	17CS2209	CSE,ECM								
2	17 CS 3176	Digital Forensics	2	0	2	0	3	3	17CS2209	CSE,ECM								
3	17 CS 3278	Database Security	2	0	2	0	3	3	17CS2209	CSE,ECM								
4	17 CS 3279	Network Security	2	0	2	0	3	3	17CS2209	CSE,ECM								
5	17 CS 3280	Defensive Programming	2	0	2	0	3	3	17CS2209	CSE,ECM								
6	17 CS 3281	Secure Software Engineering	2	0	2	0	3	3	17CS2209	CSE,ECM								
7	17 CS 3282	SYSTEM SECURITY	2	0	2	0	3	3	17CS2209	CSE,ECM								
8	17 CS 3083	Security Policy and Governance	2	0	2	0	3	3	17CS2209	CSE,ECM								
9	17 CS 3084	Cryptocurrencies & Blockchain Technologies	2	0	2	0	3	3	17CS2209	CSE,ECM								
Network Communications																		
1	17EC3085	Data Networks and Protocols	3	0	2	0	4	4	17CS2209	CSE,ECM								
2	17EC3086	Broadband Networks	3	0	0	0	3	3	17CS2209	CSE,ECM								
3	17EC3087	TCP/IP Protocol Suite	3	0	0	2	3.5	3	17CS2209	CSE,ECM								
4	17EC3088	VOIP SYSTEMS	3	0	0	0	3	3	17CS2209	CSE,ECM								
5	17EC3092	Network Security	3	0	0	0	3	3	17CS2209	CSE,ECM								
6	17EC4093	WIRELESS LAN 802 STANDARDS	3	0	0	0	3	3	17CS2209	CSE,ECM								

7	17EC4094	IP Multimedia Subsystems	3	0	0	0	3	3	17CS 2209	CSE,ECM								
8	17EC4095	Emerging Technologies-SDN, NFV,Cloud and IoT	3	0	0	0	3	3	17CS 2209	CSE,ECM								
Internet of Things																		
1	17EM5101	Sensors and Actautors	3	0	0	0	3	3		CSE,ECM								
2	17EM5107	Fundamentals of Internet of Things	2	0	2	2	3.5	4		CSE,ECM								
3	17EM5108	IoT Application Development using Python	3	0	0	0	3	3		CSE,ECM								
4	17EM5109	Wireless and Mobile Communication	3	0	0	0	3	3		CSE,ECM								
5	17EM5214	Wireless Sensor Networks	3	0	0	0	3	3		CSE,ECM								
6	17EM5215	Cloud Computing for IoT Engineers	3	0	0	0	3	3		CSE,ECM								
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING																		
EMBEDDED CONTROLLERS, IOTS & POWER ELECTRONICS																		
1	17EC3611	Wireless sensor Networks & IOT Applications		3	0	0	0	3										
2	17EC3612	Solar Photo-Voltaic cells & Solar Power Arrays		3	0	0	0	3										
3	17EC3613	Electronic Systems for Renewable Energy & Smart Grid		3	0	0	0	3										
4	17EC3614	IOT Applications for Smart Cities		3	0	0	0	3										
5	17EC3615	Systems for Smart Cities & Smart Villages		3	0	0	0	3										
VLSI & MICRO - ELECTRONICS																		
1	17EC3621	Low Power VLSI		3	0	0	0	3										
2	17EC3622	Algorithms for VLSI Design Automation		3	0	0	0	3										
3	17EC3623	IC Design & Applications		3	0	0	0	3										
4	17EC3624	VLSI Sub-system Design and Design for Testability		3	0	0	0	3										
5	17EC3625	Semiconductor Memories & MEMS		3	0	0	0	3										
AUTOMATION & ROBOTICS																		
1	17EC3631	Control Systems & Introduction to Robotics		3	0	0	0	3										

2	17EC3632	Autonomous Vehicles & Automotive Electronics		3	0	0	0	3											
3	17EC3633	Advanced Robotics		3	0	0	0	3											
4	17EC3634	Computer Vision & Applications						3											
5	17EC3635	Human Machine Interface & Brain Machine Interface		3	0	0	0	3											
6	17EC3636	Designing Automation Systems & Assistive Robotic Systems		3	0	0	0	3											
SIGNAL PROCESSING																			
1	17EC3641	Speech Signal Processing		3	0	0	0	3											
2	17EC3642	Digital Image Processing		3	0	0	0	3											
3	17EC3643	Biomedical Image Processing		3	0	0	0	3											
4	17EC3644	Statistical Signal Processing		3	0	0	0	3											
5	17EC3645	Adaptive Signal Processing		3	0	0	0	3											
6	17EC3646	Detection and Estimation of Signals		3	0	0	0	3											
COMMUNICATION & WIRELESS																			
1	17EC3651	Information Theory & Coding		3	0	0	0	3											
2	17EC3652	Wireless Architecture & Cellular Communications		3	0	0	0	3											
3	17EC3653	Satellite Communications		3	0	0	0	3											
4	17EC3654	Optical Communication		3	0	0	0	3											
5	17EC3655	Wireless Technologies (WCDMA, GPRS, GSM, UMTS)		3	0	0	0	3											
DATA COMMUNICATION & NETWORKS																			
1	17EC3661	TCP/IP Protocol Suite		3	0	0	0	3											
2	17EC3662	VoIP Systems & Broad Band Networks		3	0	0	0	3											
3	17EC3663	5G Mobile, Wireless Technologies & IEEE 802 Standards		3	0	0	0	3											
4	17EC3664	Cloud-Computing & Network Security		3	0	0	0	3											
5	17EC3665	IP Multimedia Sub-System & Emerging Technologies (Cloud, IOT, NFV, SDN)		3	0	0	0	3											
RF, MICROWAVE & RADARS																			

1	17EC3671	Microwave Engineering		3	0	0	0	3											
2	17EC3672	Antenna Design & Wave Propagation		3	0	0	0	3											
3	17EC3673	Radar Engineering & Navigational Aids		3	0	0	0	3											
4	17EC3674	Modern Antennas, Millimeter Waves & Applications		3	0	0	0	3											
5	17EC3675	Electronic Warfare, EMI & EMC		3	0	0	0	3											
DATA-COMPUTING & APPLICATION TOOLS																			
1	17EC3681	Machine Learning		3	0	0	0	3											
2	17EC3682	Data Sciences & Big-Data		3	0	0	0	3											
3	17EC3683	Pattern Recognition		3	0	0	0	3											
4	17EC3684	Block-Chain & Cyber Security		3	0	0	0	3											
5	17EC3685	Video Surveillance		3	0	0	0	3											
INSTRUMENTATION & BIO-MEDICAL ELECTRONICS																			
1	17EC3691	Autonomous Vehicle & Avionics		3	0	0	0	3											
2	17EC3692	Calibrations and Designing Advanced Instruments		3	0	0	0	3											
3	17EC3693	Biological & Cyber-Physical Systems		3	0	0	0	3											
DEPARTMENT OF ELECTRONICS AND COMPUTER ENGINEERING																			
PROFESSIONAL ELECTIVES - EMBEDDED SYSTEMS																			
1	17EM5101	Sensors and Actautors	2	0	2	0	3	4											
2	17EM5102	Advanced Microprocessors and Micro Controllers	3	0	0	0	3	3											
3	17EM5103	Hardware and Software Co-Design	3	0	0	0	3	3											
4	17EM5210	Networking Embedded Systems	3	0	0	0	3	3											
5	17EM5219	Sytem on Chip	2	0	2	0	3	4											
6	17EM5220	Embedded Security	3	0	0	0	3	3											
PROFESSIONAL ELECTIVES - WEB TECHNOLOGIES																			
1	17EM5104	Web Programming with Python	2	0	2	0	3	4											
2	17EM5105	Web Services	2	0	2	0	3	4											
3	17EM5106	Web Security	3	0	0	0	3	3											

4	17EM5213	Web Semantics	3	0	0	0	3	3											
5	17EM5211	Cloud Computing	2	0	2	0	3	4											
6	17EM5212	Data Science and Big Data Analytics	2	0	2	0	3	4											
PROFESSIONAL ELECTIVES - INTERNET OF THINGS																			
1	17EM5101	Sensors and Actautors	2	0	2	0	3	4											
2	17EM5107	Fundamentals of Internet of Things	2	0	2	0	3	4											
3	17EM5108	IoT Application Development	2	0	2	0	3	4											
4	17EM5109	Wireless and Mobile Communication	3	0	0	0	3	3											
5	17EM5214	Wireless Sensor Networks	3	0	0	0	3	3											
6	17EM5215	Cloud Computing for Internet of Things	2	0	2	0	3	4											
PROFESSIONAL ELECTIVES - CYBER SECURITY																			
1	17EM5111	Fundamentals of Cyber Security	3	0	0	0	3	3											
2	17EM5112	Mobile and Wireless Security	2	0	2	0	3	4											
3	17EM5113	Security in Internet of Things	2	0	2	0	3	4											
4	17EM51216	Computer Forensics	3	0	0	0	3	3											
5	17EM5217	Intrusion Detection Systems	2	0	2	0	3	4											
6	17EM5218	Ethical Hacking and Web Security	2	0	2	0	3	4											
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING																			
INDUSTRIAL AUTOMATION TECHNOLOGIES																			
1	17 EE 3251	Industrial communication Protocals & Cyber Security	3	0	0	0	3	3	Nil										
2	17 EE 3252	Industrial Process Control & Automation	3	0	0	0	3	3	Nil										
3	17 EE 3253	SCADA and DCS	3	0	0	0	3	3	Nil										
4	17 EE 4151	Industrial Drives and Control	3	0	0	0	3	3	17 EE 3103										
5	17 EE 4152	IOT for Industrial Automation	3	0	0	0	3	3	Nil										
GREEN ENERGY TECHNOLOGIES																			
1	17 EE 3281	Solar PV and Thermal Technologies	3	0	0	3	3	3	Nil										
2	17 EE 3282	Wind & Micro Energy Sources	3	0	0	3	3	3	Nil										
3	17 EE 4162	Energy Conservation & Audit	3	0	0	3	3	3	Nil										

4	17 EE 4181	Energy Storage Systems	3	0	0	3	3	3	Nil										
5	17 EE 4182	Energy Management Systems	3	0	0	3	3	3	17 EE 4162										
SMART GRID TECHNOLOGIES																			
1	17 EE 3271	Energy Accounting And Management Systems	3	0	0	3	3	3	Nil										
2	17 EE 3272	Substation Practice	3	0	0	3	3	3	17 EE 3101										
3	17 EE 3273	Distribution System Testing And Safety Practices	3	0	0	3	3	3	Nil										
4	17 EE 4171	Smart Grid Communication And Cyber Security	3	0	0	3	3	3	Nil										
5	17 EE 4172	Smart Distribution Systems	3	0	0	3	3	3	17 EE 3273										
ELECTRIC VEHICLE TECHNOLOGIES																			
1	17 EE 3261	INTRODUCTION TO ELECTRIC VEHICLE	3	0	0	0	3	3	Nil										
2	17 EE 3262	BATTERY MODELLING FOR ELECTRIC VEHICLES	3	0	0	0	3	3	Nil										
3	17 EE 3263	CHARGING STATION FOR ELECTRIC VEHICLE	3	0	0	0	3	3	17 EE 3102										
4	17 EE 4161	BATTERY STATES ESTIMATION	3	0	0	0	3	3	17 EE 3262										
5	17 EE 4163	ELECTRIC VEHICLE FAULT DIAGNOSIS AND CONTROL	3	0	0	0	3	3	Nil										
DEPARTMENT OF MECHANICAL ENGINEERING																			
Design Specialization																			
1	17ME4051	Design of Transmission Elements	2	0	2	0	3	4	17ME 3220										
2	17ME4052	Theory of Elasticity and Plasticity	3	0	0	0	3	4	17ME 2213										
3	17ME4053	Advanced Vibrations and Noise Control	2	0	2	0	3	4	17ME 2110										
4	17ME4054	Computer Aided Design	2	0	2	0	3	4	Nil										
5	17ME4055	Creep, Fatigue and Fracture Mechanics	3	0	0	0	3	3	17ME 2213										

6	17ME4056	Advanced Strength of Materials	2	0	2	0	3	4	17ME 2213										
7	17ME4057	Mechanics of Composite Materials	2	0	2	0	3	4	17ME 2213										
Strategic Manufacturing Specialization																			
8	17ME4061	Modern Manufacturing Processes	2	0	2	0	3	4	17ME 1003										
9	17ME4062	Advanced Materials	3	0	0	0	3	3	Nil										
10	17ME4063	Additive Manufacturing	2	0	2	0	3	4	Nil										
11	17ME4064	Tool Engineering and Design	2	0	2	0	3	4	17ME 3114										
12	17ME4065	Flexible Manufacturing Systems	2	0	2	0	3	4	17ME 3219										
13	17ME4066	Geometric Dimensioning and Tolerancing	2	0	2	0	3	4	Nil										
14	17ME4067	Reverse Engineering and Rapid Prototyping	3	0	0	0	3	3	Nil										
Automobile Engineering Specialization																			
15	17ME4071	Automobile Engineering	2	0	2	0	3	4	Nil										
16	17ME4072	Automobile Engine Design	2	0	2	0	3	4	17ME 3220										
17	17ME4073	Automotive Transmission	2	0	2	0	3	4	Nil										
18	17ME4074	Autotronics & Safety	2	0	2	0	3	4	Nil										
19	17ME4075	Alternative Energy Sources for Automobiles	2	0	2	0	3	4	Nil										
20	17ME4076	Automotive Electrical and Electronics System	2	0	2	0	3	4	Nil										
21	17ME4077	Automobile Engine System and Performance	2	0	2	0	3	4	Nil										
Autotronics Specialization																			
22	17ME4081	Automotive Sesnsor and Applications	2	0	2	0	3	4	Nil										
23	17ME4082	Autotronics	2	0	2	0	3	4	Nil										
24	17ME4083	Electronic Engine Management System	2	0	2	0	3	4	Nil										
25	17ME4084	Instrumentation in Automotive Industries	2	0	2	0	3	4	Nil										
26	17ME4085	Autotronics and Vehicle Intelligence	2	0	2	0	3	4	Nil										
27	17ME4086	Automotive Systems	2	0	2	0	3	4	Nil										

28	17ME4087	Programmable Logic Controller	2	0	2	0	3	4	Nil										
Robotics and Mechatronics Specialization																			
29	17ME4091	Artificial Intelligence for Robotics	2	0	2	0	3	4	Nil										
30	17ME4092	Automation System Design	2	0	2	0	3	4	Nil										
31	17ME4093	Industrial Automation and Control	2	0	2	0	3	4	Nil										
32	17ME4094	Industrial Hydraulic and Pneumatic Systems	2	0	2	0	3	4	Nil										
33	17ME4095	Industrial Robotics and Material Handling Systems	2	0	2	0	3	4	Nil										
34	17ME4096	Micro Controllers and PLC	2	0	2	0	3	4	Nil										
35	17ME4097	Mechatronics System Design	2	0	2	0	3	4	Nil										
Soft Computing and Data Analytics																			
36	17ME4101	Programming Skills	2	0	2	0	3	4	Nil										
38	17ME4102	Data Analytics	2	0	2	0	3	4	Nil										
37	17ME4103	Python	2	0	2	0	3	4	Nil										
39	17ME4104	Machine Learning	2	0	2	0	3	4	17ME 4102										
40	17ME4105	Artificial Intelligence	2	0	2	0	3	4	17ME 4102										
41	17ME4106	Fuzzy Logic and Neural Networks	2	0	2	0	3	4	Nil										
42	17ME4107	Robotics	2	0	2	0	3	4	Nil										
DEPARTMENT OF PETROLEUM ENGINEERING																			
UP STREAM																			
1	17 PE 3251	Enhanced Oil Recovery	3	0	0	0	3	3	17 PE 3111										
2	17 PE 3252	Flow & Transport through Porous Medium	3	0	0	0	3	3	17 PE 2102										
3	17 PE 3253	Oil & Gas Marketing and Resource Management	3	0	0	0	3	3	NIL										
4	17 PE 3254	CO_2 Sequestration	3	0	0	0	3	3	NIL										

5	17 PE 3255	Transport Phenomenon	3	0	0	0	3	3	17 PE 2102,17 PE 2207,17 PE 3110										
6	17 PE 3256	Advanced Drilling Operations	3	0	0	0	3	3	17 PE 2209										
7	17 PE 4151	Drilling Fluids & Cementing Technology	3	0	0	0	3	3	17 PE 2209										
8	17 PE 4152	Oil and Gas Field Development	3	0	0	0	3	3	NIL										
9	17 PE 4153	Oil and Gas Processing Plant Design	3	0	0	0	3	3	17 PE 3217										
10	17 PE 4154	Natural Gas Engineering and Processing	3	0	0	0	3	3	17 PE 3215										
11	17 PE 4155	Pipeline Engineering	3	0	0	0	3	3	17 PE 2102										
12	17 PE 4156	Fuel Technology	3	0	0	0	3	3	NIL										
13	17 PE 4157	Unconventional Energy Resources	3	0	0	0	3	3	NIL										
14	17 PE 4158	Work over and Stimulation Operations	3	0	0	0	3	3	17 PE 3215										
15	17 PE 4159	Geothermal Reservoir Engineering	3	0	0	0	3	3	17 PE 2207										
LIST OF OPEN ELECTIVES																			
1	17BT40A1	IPR & PATENT LAWS	3	0	0	0	3	3	NIL	CE, CSE, ECE, ECM, EEE, ME,PE									
2	17CE40A2	ENVIRONMENTAL POLLUTION CONTROL METHODS	3	0	0	0	3	3	NIL	BT, CSE, ECE, ECM, EEE, ME,PE									
3	17CE40A3	SOLID AND HAZARDOUS WASTE MANAGEMENT	3	0	0	0	3	3	NIL	BT, CSE, ECE, ECM, EEE, ME,PE									
4	17CE40A4	REMOTE SENSING & GIS	3	0	0	0	3	3	NIL	BT, CSE, ECE, ECM, EEE, ME,PE									
5	17CE40A5	DISASTER MANAGEMENT	3	0	0	0	3	3	NIL	BT, CSE, ECE, ECM, EEE, ME,PE									
6	17CS40A6	FUNDAMENTALS OF DBMS	3	0	0	0	3	3	NIL	BT, CE, ECE,EEE, ME,PE									
7	17CS40A7	FUNDAMENTALS OF SOFTWARE	3	0	0	0	3	3	NIL	BT, CE, ECE,EEE,									

		ENGINEERING								ME,PE									
8	17CS40A8	FUNDAMENTALS OF INFORMATION TECHNOLOGY	3	0	0	0	3	3	NIL	BT, CE, ECE,EEE, ME,PE									
9	17EC40A9	IMAGE PROCESSING	3	0	0	0	3	3	NIL	BT, CE, ECE,EEE, ME,PE									
10	17EM40B1	LINUX PROGRAMMING	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, EEE, ME,PE									
11	17EM40B2	E-COMMERCE	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, EEE, ME,PE									
12	17EE40B3	RENEWABLE ENERGY SOURCES	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM,ME,PE									
13	17ME40B4	ROBOTICS	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE									
14	17ME40B5	MECHATRONICS	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE									
15	17ME40B6	OPERATIONS RESEARCH	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE									
16	17PH40B7	NANO MATERIALS & TECHNOLOGY	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE									
17	17PE40B8	SUBSEA ENGINEERING	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME									
18	17PE40B9	OIL AND GAS MANAGEMENT	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME									
19	17GN40C1	SELF-DEVELOPMENT	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE									
20	17GN40C2	INDIAN CULTURE AND HISTORY	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE									
21	17GN40C3	EMOTIONAL INTELLIGENCE	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE									
22	17GN40C4	PROFESSIONAL ETHICS AND VALUES	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE									
23	17GN40C5	BEHAVIOURAL SCIENCES	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE									
24	17GN40C6	GENDER SENSITIZATION	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE									
LIST OF MANAGEMENT ELECTIVES																			
1	17MB4051	PARADIGMS IN MANAGEMENT	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE,									

		THOUGHT								ECM, EEE, ME,PE								
2	17MB4052	INDIAN ECONOMY	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE								
3	17MB4053	MANAGING PERSONAL FINANCES	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE								
4	17MB4054	BASICS OF MARKETING FOR ENGINEERS	3	0	0	0	3		NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE								
5	17MB4055	ORGANIZATION MANAGEMENT	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE								
6	17MB4056	RESOURCES SAFETY AND QUALITY MANAGEMENT	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE								
7	17MB4057	ECONOMICS FOR ENGINEERS	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE								
LIST OF FOREIGN LANGUAGES																		
1	17GN3051	ARABIC LANGUAGE	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE								
2	17GN3052	BENGALI LANGUAGE	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE								
3	17GN3053	CHINESE LANGUAGE	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE								
4	17GN3054	FRENCH LANGUAGE	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE								
5	17GN3055	GERMAN LANGUAGE	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE								
6	17GN3056	HINDI LANGUAGE	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE								
7	17GN3057	ITALIAN LANGUAGE	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE								
8	17GN3058	JAPANESE LANGUAGE	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE								
9	17GN3059	KANNADA LANGUAGE	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE								
10	17GN3060	RUSSIAN LANGUAGE	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE								
11	17GN3061	SIMHALI LANGUAGE	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE, ECM, EEE, ME,PE								
12	17GN3062	SPANISH LANGUAGE	3	0	0	0	3	3	NIL	BT, CE, CSE, ECE,								

										ECM, EEE, ME,PE								
ADVANCE COURSES - CSE																			
1	17CS2107A	SOFTWARE ENGINEERING	3	1	2	0	5	6	NIL	CSE			5					
2	17CS2208A	Operating Systems	4	0	4	0	6	8	NIL	CSE			6					
3	17CS2209A	Computer Networks	4	0	4	0	6	8	NIL	CSE			6					
4	17CS2210A	Database Management Systems	3	1	4	0	6	8	NIL	CSE,ECM			6		6			
5	17CS3114A	Analysis & Design of Algorithms	4	0	4	4	7	12	17CS 2103	CSE			7					
6	17CS3115A	Distributed Computing	3	0	4	0	5	7	17CS 2208	CSE			5					
7	17CS3116A	Entreprise Programming	3	0	4	4	6	11	17CS 2004	CSE			6					

BACHELOR OF ARCHITECTURE

SEMESTER I

SNO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1	15MT1109	Mathematics	3	0	0	3
2	15AR1101	History of Architecture and Culture - I	3	0	0	3
3	15AR1102	Theory of Architecture	3	0	0	3
STUDIO						
4	15EN1101	Rudiments Of Communication Skills	0	0	4	4
5	15AR1151	Architectural Drawing - I	0	0	6	6
6	15AR1152	Art Studio	0	0	6	6
7	15AR1153	Basic Design	0	0	12	12
		TOTAL	9	0	28	37

SEMESTER II

SNO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1	15 AR 1204	Mechanics of Structures – I	4	0	0	4
2	15 AR 1205	History of Architecture and Culture - II	3	0	0	3
3	15 AR 1233	Theory of Design	3	0	0	3
STUDIO						
4	15 AR 1264	Model Making Workshop	0	0	4	4
5	15 AR 1254	Building Construction - I	0	0	6	6
6	15 AR 1255	Architectural Drawing - II	0	0	6	6
7	15 AR 1256	Architectural Design – I	0	0	10	10
		TOTAL	10	0	26	36

SEMESTER III

SNO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1	15 AR 2108	Mechanics of Structures - II	4	0	0	4
2	15 AR 2109	History of Architecture and Culture - III	3	0	0	3
3	15 AR 2110	Climate and Built Environment	3	0	0	3
4	15 AR 2134	Building Materials - I	3	0	0	3
STUDIO						
5	15 AR 2165	Computer Aided Visualization	0	0	5	5
6	15 AR 2157	Building Construction - II	0	0	6	6
7	15 AR 2158	Architectural Design - II	0	0	10	10
		TOTAL	13	0	21	34

SEMESTER IV

SNO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1	15 AR 2213	Design of Structures - I	4	0	0	4
2	15 AR 2235	Building Materials - II	3	0	0	3

3	15 AR 2215	Site Analysis and Planning	3	0	0	3
STUDIO						
4	15 AR 2267	Surveying and Leveling	0	0	4	4
5	15 AR 2259	Architectural Design - III	0	0	10	10
6	15 AR 2268	Building Construction III	0	0	6	6
7	15 AR 2266	Advanced Computer Aided Visualization	0	0	4	4
	TOTAL		10	0	24	34

SEMESTER V

SNO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1	15 AR 3118	Design of Structures - II	4	0	0	4
2	15 AR 3136	Building Bye-Laws & Codes of Practice	3	0	0	3
3	15 AR 3137	Introduction to Landscape Architecture	3	0	0	3
4		Elective – I	3	0	0	3
THEORY CUM STUDIO						
5	15 AR 3138	Building Services - I	2	0	2	4
STUDIO						
6	15 AR 3160	Architectural Design - IV	0	0	12	12
7	15 AR 3169	Building Construction IV	0	0	6	6
		TOTAL	15	0	20	35

SEMESTER VI

SNO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1	15 AR3222	Design of Structures - III	4	0	0	4
2	15 AR3223	Human Settlement and Planning	3	0	0	3
3	15 AR3239	Evolution of Modern Architecture	3	0	0	3
4		Elective - II	3	0	0	3
THEORY CUM STUDIO						
5	15 AR3240	Building Services - II	2	0	2	4
STUDIO						
6	15 AR3261	Architectural Design - V	0	0	12	12
7	15 AR3270	Working Drawing	0	0	6	6
		TOTAL	15	0	20	35

SEMESTER VII

SNO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1	15 AR 4128	Urban Design	3	0	0	3
2	15 AR 4141	Advanced Building Services	3	0	0	3
3		Elective - III	3	0	0	3
4		Elective - IV	3	0	0	3
THEORY CUM STUDIO						
		Advanced Building Construction and				
5	15 AR 4142	Materials	2	0	4	6
6	15 AR 4124	Estimation,Costing and Specification	3	0	3	6

STUDIO						
7	15 AR 4162	Architectural Design - VI	0	0	12	12
		TOTAL	**17**	**0**	**19**	**36**

SEMESTER VIII

SNO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1	15 AR 4229	Building Construction and Management	3	0	0	3
2	15 AR 4242	Behavioral Architecture	3	0	0	3
3	15 AR 4243	Advanced Structural Design and Systems	3	0	0	3
4		Elective - V	3	0	0	3
5		Elective - VI	3	0	0	3
6	15 AR 4272	Pre Thesis Seminar (Dissertation)	0	0	6	6
7	15 AR 4263	Architectural Design - VII	0	0	14	14
		TOTAL	15	0	20	35

SEMESTER IX

SNO	COURSE CODE	COURSE TITLE	L	T	P	C
1	15 IE 5148	Practice School / Practical Training	0	0	30	30
2	15 AR 5171	Documentation	0	0	5	5
		TOTAL	0	0	35	35

SEMESTER X

SNO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1	15 AR 5244	Professional Practice and Ethics	0	0	3	3
STUDIO						
2	15 IE 5250	Project / Thesis	0	0	33	33
		TOTAL	0	0	36	36

LIST OF ELECTIVES

SEMESTER V
ELECTIVE I

SNO	COURSE CODE	COURSE TITLE	L	T	P	C
1	15 AR 31A1	Set Design	3	0	0	3
2	15 AR 31A2	Vernacular Architecture	3	0	0	3

SEMESTER VI
ELECTIVE II

SNO	COURSE CODE	COURSE TITLE	L	T	P	C
1	15 AR 32B1	Energy Efficient Architecture	3	0	0	3
2	15 AR 32B2	Architectural Journalism and Photography	3	0	0	3

SEMESTER VII
ELECTIVE III

SNO	COURSE CODE	COURSE TITLE	L	T	P	C
1	15 AR 41C1	Green Building	3	0	0	3
2	15 AR 41C2	Sustainable Building Design	3	0	0	3

ELECTIVE IV

SNO	COURSE CODE	COURSE TITLE	L	T	P	C
1	15 AR 41C3	Furniture Design and Product Design	3	0	0	3
2	15 AR 41C4	Interior Design	3	0	0	3

SEMESTER VIII
ELECTIVE V

SNO	COURSE CODE	COURSE TITLE	L	T	P	C
1	15 AR 42D1	Housing	3	0	0	3
2	15 AR 42D2	Architectural Conservation	3	0	0	3

ELECTIVE VI

SNO	COURSE CODE	COURSE TITLE	L	T	P	C
1	15 AR 42D3	Industrial Building System	3	0	0	3
2	15 AR 42D4	Intelligent Buildings	3	0	0	3

L – Lecture period T- Tutorial Period P- Practical period C –Credits

Note: Elective cannot be taken twice by a student.

BACHELOR OF COMPUTER APPLICATIONS(BCA)

SEMESTER I

SNO	COURSE CODE	COURSE TITLE	L	T	P	C
1	15EN1101	Rudiments of Communication Skills	0	0	4	2
2	15MT1105	Fundamentals of Mathematics	3	0	2	4
3	15GN1001	Ecology and Environment	2	0	0	2
4	15CA1101	Computer Fundamentals & Computer Organization	3	0	2	4
5	15CA1102	Programming in C	2	2	2	4
6	15CA1103	Linux Programming	2	2	2	4
		TOTAL				20

SEMESTER II

SNO	COURSE CODE	COURSE TITLE	L	T	P	C
1	15EN1202	Interpersonal Communication Skills	0	0	4	2
2	15MT1208	Computer-Oriented Statistical Methods	3	0	2	4
3	15CA1204	System Configuration And Maintenance	3	0	2	4
4	15CA1205	Operating System	3	0	2	4
5	15CA1206	Programming In Java	2	2	2	4
6	15CA1207	Elementary Data Structures Using C	2	2	2	4
		TOTAL				22

SEMESTER III

SNO	COURSE CODE	COURSE TITLE	L	T	P	C
1	15EN2103	Professional Communication Skills	0	0	4	2
2	15CA2108	Fundamentals Of Storage	4	0	0	4
3	15CA2109	Software Engineering	3	0	2	4
4	15CA2110	Computer Networks	3	0	2	4
5	15CA2111	Rdbms	2	2	2	4
6	15CA2112	Web Technologies	2	2	2	4
7	15CA2113	Principles Of Virtualization	2	0	4	4
		Total				26

SEMESTER IV

SNO	COURSE CODE	COURSE TITLE	L	T	P	C
1	15EN2204	Employability Skills	0	0	4	2
2	15GN1002	Human Values	2	0	0	2
3	15CA2214	Information Security Fundamentals	3	2	0	4
4	15CA2215	Ethical Hacking Fundamentals	2	2	2	4
5	15CA2216	Cryptography Fundamentals	3	2	0	4
6	15CA2217	Introduction To Cloud Technology	2	2	2	4
7	15CA2218	Fundamentals Of Data Center	3	2	0	4
		Total				24

SEMESTER V

SNO	COURSE CODE	COURSE TITLE	L	T	P	C
1	15EN3105	Verbal And Quantitative Reasoning	0	0	4	2
2	15CA3119	Computer Forensics – An Introduction	2	2	2	4
3	15CA3120	Virtualization And Cloud Security	3	2	0	4
4	15CA3121	It Governance, Risk, & Information Security Management	3	2	0	4
5	15CA3122	Server Operating System - Ii	2	2	2	4
6	15CA3123	Server Operating System - I	2	2	2	4
		Total				22

SEMESTER VI

SNO	COURSE CODE	COURSE TITLE	L	T	P	C
1	15EN3206	Corporate Communication Skills	0	0	4	2
2	15CA3224	Wireless And VOIP Security, Security In Mobile Application Development	3	2	0	4
3	15CA3225	Introduction To Windows Azure	2	2	2	4
		Total				10

Intenship:

Course Code	Course Title	Duration	Credits
15IE3049	Internship	6-7 weeks in summer (Between Sem IV-V)	2
		total	2

Project work:

Course Code	Project	L	T	P	CR
15IE3050	Project and Viva-Voce	0	0	18	9
	TOTAL				9

BACHELOR OF PHARMACY

SEMESTER I

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17PH1101	Human Anatomy And Physiology-I	3	1	4	0	6
2	17PH1102	Pharmaceutical Analysis	3	1	4	0	6
3	17PH1103	Pharmaceutics- I	3	1	4	0	6
4	17PH1104	Pharmaceutical Inorganic Chemistry	3	1	4	0	6
5	17PH1105	Communication Skills	2	0	2	0	3
6	17PH1106RM	Remedial Biology	3	0	2	0	4
7	17PH1106RB	Remedial Mathematics	3	1	0	0	4
8	17PH1107	Human Anatomy And Physiology-Ii	3	1	4	0	6

SEMESTER II

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17PH1208	Pharmaceutical Organic Chemistry –I	3	1	4	0	6
2	17PH1209	Biochemistry	3	1	4	0	6
3	17PH1210	Pathophysiology	3	1	0	0	4
4	17PH1211	Computer Applications In Pharmacy	3	0	2	0	4
5	17PH1212	Environmental Sciences	3	0	0	0	3

SEMESTER III

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17PH2113	Pharmaceutical Organic Chemistry –II	3	1	4	0	6
2	17PH2114	Physical Pharmaceutics-I	3	1	4	0	6
3	17PH2115	Pharmaceutical Microbiology	3	1	4	0	6
4	17PH2116	Pharmaceutical Engineering	3	1	4	0	6

SEMESTER IV

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17PH2217	Pharmaceutical Organic Chemistry Iii	3	1	0	0	4
2	17PH2218	Medicinal Chemistry – I	3	1	4	0	6
3	17PH2219	Physical Pharmaceutics-Ii	3	1	4	0	6
4	17PH2220	Pharmacology-I	3	1	4	0	6
5	17PH2221	Pharmacognosy And Phytochemistry I	3	1	4	0	6

SEMESTER V

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17PH3122	**Medicinal Chemistry II**	3	1	0	0	4
2	17PH3123	**Industrial Pharmacy I**	3	1	4	0	6
3	17PH3124	**Pharmacology II**	3	1	4	0	6
4	17PH3125	**Pharmacognosy and Phytochemistry II**	3	1	4	0	6
5	17PH3126	**Pharmaceutical Jurisprudence**	3	1	0	0	4

SEMESTER VI

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17PH3227	Medicinal Chemistry – III	3	1	4	0	6
2	17PH3228	Pharmacology-III	3	1	4	0	6
3	17PH3229	Herbal Drug Technology	3	1	4	0	6
4	17PH3230	Biopharmaceutics And Pharmacokinetics	3	1	0	0	4
5	17PH3231	Pharmaceutical Biotechnology	3	1	0	0	4
6	17PH3232	Pharmaceutical Quality Assurance	3	1	4	0	6

SEMESTER VII

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17PH4133	Instrumental Methods Of Analysis	**3**	**1**	**4**	**0**	**6**
2	17PH4134	Industrial Pharmacyii	**3**	**1**	**4**	**0**	**6**
3	17PH4135	Pharmacy Practice	**3**	**1**	**4**	**0**	**6**
4	17PH4136	Novel Drug Delivery Systems	**3**	**1**	**4**	**0**	**6**
5	17PH4137	Practice School	**12**	**0**	**0**	**0**	**6**

SEMESTER VIII

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17PH4238	Biostatisitcs And Research Methodology	3	1	0	0	6
2	17PH4239	Social And Preventive Pharmacy	3	1	0	0	4
3	17PH4240ET	Pharma Marketing Management	2* 3-1-0				2*4
4	17PH4241ET	Pharmaceutical Regulatory Science					
5	17PH4242ET	Pharmacovigilance					
6	17PH4243ET	Quality Control And Standardization Of Herbals					
7	17PH4244ET	Computer Aided Drug Design					
8	17PH4245ET	Cell And Molecular Biology					
9	17PH4246ET	Cosmetic Science					
10	17PH4247ET	Experimental Pharmacology					
11	17PH4248ET	Advanced Instrumentation Techniques					
12	17PH4249ET	Dietary Supplements And Nutraceuticals					
13	17PH4250	Project Work	12	0	0	0	6

Bachelor of Science Multimedia (B.Sc MULTIMEDIA)

Semester – I

S.No	Subject Code	Subject Name	L	T	P	S	Cr
1	17EN1101	English - Rudiments Of Communication Skills	0	0	4	0	2
2	17GN1101	Ecology & Environment	2	0	0	0	2
3	17FA1101	Indian Culture And Art	3	0	0	0	3
4	17FA1102	Design Basics	3	0	0	0	3
5	17FA1103	Drawing – I	0	0	6	0	3
6	17FA1104	Design 2d Practice	0	0	6	0	3
7	17FA1105	Color Composition	0	0	6	0	3
8	17FA1106	Digital Literacy	3	0	0	0	3
9	17FA1107	Digital Literacy	0	2	4	0	0
		TOTAL					22

Semester – II

SNO	COURSE CODE	Subject Name	L	T	P	S	CR
1	17EN1202	English - Interpersonal Communication Skills	0	0	4	0	2
2	17EN1201/ 17EN1203	Language - Telugu /French	0	0	1	0	2
3	17FA1204	Story of Art	0	0	0	2	3
4	17FA1209	Introduction to Visual Culture	2	0	0	0	3
5	17FA1210	Drawing - II	3	0	0	0	3
6	17FA1211	Design 3D practices	1	0	4	0	3
7	17FA1212	Clay Modeling	1	0	2	0	3
8	17FA1213	Photography Basics	1	0	4	0	3
9	17FA1214	Photography Basics	1	0	4	0	
10	17FA1215	Advertising Art & Ideas	1	0	4	0	
		TOTAL					22

SEMESTER III

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17UC2103	Professional Communication Skills	0	0	4	0	2
2	17GN2103	Counseling	0	0	1	0	0
3	17GN2109	Co curricular Activity	0	0	0	2	0.5
4	17UC0010	Universal Human Values & Professional Ethics	2	0	0	0	2
5	17BM2103	Introduction to Visual Communication	3	0	0	0	3
6	17BM2104	2D Digital Animation	1	0	4	0	3
7	17BM2105	Writing For Media	1	0	2	0	2
8	17BM2106	Graphic Design	1	0	4	0	3
9	17BM2107	Audio & Video Production	1	0	4	0	3
10	17BM2108	Photography Advance	1	0	4	0	3
11	17BM2109	Out Door Advertising	1	0	4	0	

12	17BM2109	Functional Sculpture	1	0	4	0	
		TOTAL					21.5

SEMESTER IV

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17UC2204	Aptitude Builder 1	0	0	4	0	2
2	17GN2204	Counseling	0	0	1	0	0
3	17GN2210	Co curricular Activity	0	0	0	2	0.5
4	17SC1105	Logic & Reasoning	0	0	2	0	1
5	17BM2201	Media Laws & Ethics	3	0	0	0	3
6	17BM2202	Television Production	1	0	4	0	3
7	17BM2203	A V Editing Techniques	1	0	4	0	3
8	17BM2204	Design for Web	2	0	2	0	3
9	17BM2205	Year End project	0	0	0	8	2
10	17BM2206	Open Elective-I	3	0	0	0	3
11	17BM 2207	Open Elective-II	3	0	0	0	
12	17BM 2208	Management Electives	3	0	0	0	
		TOTAL					20.5

SEMESTER V

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17UC3105	Aptitude Builder 2	0	0	4	0	2
2	17BM3101	Media Management & Entrepreneurship	3	0	0	0	3
3	17BM3102	Media Research Methods	3	0	0	0	3
4	17BM3103	Term Paper	0	0	4	0	3
5		Specialization Paper – I	2	0	4	0	4
6		Specialization Paper – II	2	0	4	0	4
7		Specialization Paper – III	2	0	4	0	4
		Total					22

1	17BM3104	Modern Techniques in Advertising	2	0	4	0	4
2	17BM3105	Advertising Media Planning	2	0	4	0	4
3	17BM3106	User Interface Design	2	0	4	0	4

1	17BM3107	Rigging and Character Animation	2	0	4	0	4
2	17BM3108	Advanced Compositing	2	0	4	0	4
3	17BM3109	Special Effects and Dynamics	2	0	4	0	4

1	17BM3110	Screen Writing and Story Boarding	2	0	4	0	4
2	17BM3111	Cinematography	2	0	4	0	4
3	17BM3112	Advanced Post Production Tools	2	0	4	0	4

SEMESTER VI

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
	171E2246	Internship	0	0	0	0	8
	171E4048	Major Project	0	0	0	32	8
	171E4050	Portfolio/Presentatio	0	0	0	0	4
		TOTAL					22

BACHELOR OF COMMERCE (B.COM (H))

SEMESTER I

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	15 EN1101	Rudiments of Communication Skills	0	0	4	0	2
2	17 CM1101	Principles of Accounting	3	2	0	0	4
3	17 CM1102	Fundamentals of Business Economics	3	0	0	0	3
4	17 CS1151	Business Information system	1	0	4	0	3
5	17 CM1103	Business Statistics	3	2	0	0	4
6	17 CM1104	Principles of Organization & Management	3	0	0	0	3
7	17 CM1105	Principles of Banking & Insurance	3	0	0	0	3
8	17 ACCAF3	Financial Accounting	3	2	0	0	4
9		TOTAL					26

SEMESTER II

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	15 EN1202	Interpersonal Communication Skills	0	0	4		2
2	17 CM 1206	Financial Accounting	3	2	0		4
3	17 CM1207	Macro- Economic analysis	3	0	0		3
4	17 CM1208	Accounting information system	1	0	4		3
5	17 MT1250	Business Mathematics	3	2	0		4
6	15 GS1208	Environmental studies	3	0	0		3
7	17 CM 1209	Legal &Regulatory aspects of banking	3	0	0		3
8	17AC CAF1	Accountant in Business	3	2	0		4
		TOTAL					26

SEMESTER III

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	15 EN2103	Professional Communication Skills	0	0	4	0	2
2	17 CM 2110	Advanced accounting	3	2	0	0	4
3	17 CM2111	Fundamentals of Cost Accounting	3	2	0	0	4
4	17 CM2112	Business Law	4	0	0	0	4
5	17 CM2113	Fundamentals of Financial Management	3	0	0	0	3
6	17 CM2114	Fundamentals of Income Tax	3	2	0	0	4
7	17 CM2115	Principles of auditing	3	0	0	0	3
8	17 ACCAF2	Management Accounting	3	2	0	0	4
9	17AC CAF4	Corporate & Business law	4	0	0	0	4
		TOTAL					32

SEMESTER IV

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	15 EN2204	Employability skills	0	0	4	0	2
2	17 CM2215	Corporate Accounting	3	2	0	0	4
3	17 CM2216	Advanced Cost Accounting	3	2	0	0	4
4	17 CM2217	Corporate & Allied Laws	4	0	0	0	4
5	17 CM2218	Management Accounting	3	2	0	0	4
6	17CM2219	Assessment of Direct Taxes	3	2	0	0	4

7	15EN2206	Corporate communicatio n skills	0	0	4	0	2
8	17ACCAF6	Taxation [India Taxation instead of UK]	3	2	0	0	5
9	17ACC AF9	Financial Management	3	0	0	0	3
		TOTAL					34

SEMESTER V

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	15EN3106	Verbal & Quantitative reasoning	0	0	4	0	2
2	17CM3121	Business strategy	3	0	0	0	3
3	17CM3122	Advanced Corporate Accounting	3	2	0	0	4
4	17CM3123	Accounting & Reporting standards	3	2	0	0	4
5	17 CM3124	Indirect Tax	3	2	0	0	4
6	17 CM3152	Elective-I(CTPM)	3	2	0	0	4
7	17 CM3163	Elective-II (SAPM)	3	2	0	0	4
8	17 ACCA F5	Performance Management	3	2	0	0	4
9	17ACC AF7	Financial Reporting	3	2	0	0	4
		TOTAL					33

SEMESTER VI

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17ACCAF8	Audit and Assurance	4	0	0	0	4
2	17ACCAP1	Governance, Risk & Ethics	3	0	0	0	3
3	17ACCAP2	Corporate Reporting	3	2	0	0	4
4	17ACCAP3	Business Analysis	3	2	0	0	4
5	17ACCAP4	Advanced Financial Management	3	2	0	0	4
6	17ACCAP5	Advanced Performance Management	3	2	0	0	4
7	17ACCAP6	Advanced Taxation	3	2	0	0	4
8	17ACCAP7	Advanced Audit and Assurance	3	2	0	0	4
		TOTAL					31

ELECTIVE SUBJECTS:

ELECTIVES FOR ACCA

Code	Course Title	L	T	P	H	C
17ACCAP4	Advanced Financial Management	3	2	0	4	4
17ACCAP5	Advanced Performance Management	3	2	0	4	4
17ACCAP6	Advanced Taxation	3	2	0	4	4
17ACCAP7	Advanced Audit and Assurance	3	2	0	4	4

NOTE: OUT OF THE ABOVE FOUR THE CANDIDATE CAN OPT ANY TWO SUBJECTS

Course Code	Course Title	L	T	P	H	C
ELECTIVES – I (Accounting & Taxation)						
17 CM 3150	Corporate Restructure	3	2	0	4	4
17 CM 3151	Advanced Cost & Management Accounting	3	2	0	4	4
17 CM 3152	Corporate Tax Planning & Management	3	2	0	4	4
17 CM 3153	Entrepreneurship Development	3	2	0	4	4

ELECTIVES – II (FINANCE)						
17 CM 3160	Financial Derivatives	3	0	2	5	4
17 CM 3161	Strategic Financial management	3	0	2	5	4
17 CM 3162	Export and Import documentation	3	0	2	5	4
17 CM 3163	Security analysis & Portfolio Management	3	0	2	5	4

BACHELOR OF BUSINESS ADMINSTRATION (BBA)

SEMESTER I

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	17HS109	English Language Skills I	2	2	0	0	3
2	17BS114	Business Mathematics	3	2	0	0	4
3	17ES119	Introduction to IT	1	0	4	0	3
4	17HS110	Human Skills	3	0	0	0	3
5	17BB11C4	Perspectives of Management	3	0	0	0	3
6	17BB11C5	Business Case Studies	2	2	0	0	3
		TOTAL					19

SEMESTER II

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	17HS111	English Language Skills II	2	2	0	0	3
2	17BB12C1	Introduction to Financial Accounting	3	2	0	0	4
3	17BS115	Business Statistics	3	2	0	0	4
4	17BB12C3	Indian Business Environment	3	0	0	0	3
5	17BB12C4	Managerial Economics	3	0	0	0	3
6	17HS112	Environment Science	3	0	0	0	2
		TOTAL					19

17BB10P0 Project – 6 Credits

SEMESTER III

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	17BB21C0	Macro Economics	3	0	0	0	3
2	17BB21C1	Financial Accounting	3	2	0	0	4
3	17BB21C2	Fundamentals of Income Tax	3	2	0	0	4
4	17BB21K3	Foreign Language	2	0	2	0	3
5	17BB21C4	Statistical Data Analysis	1	0	4	0	3
6	17BB21K5	Business communication	2	2	0	0	3
		TOTAL					18

SEMESTER IV

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	17BB22C0	Company Law	3	0	0	0	3
2	17BB22C1	Financial Management	3	2	0	0	4
3	17BB22C2	International Business Environment	3	0	0	0	3
4	17BB22C3	Assessment of Direct Taxes	3	2	0	0	4
5	17BB22C4	Business Research Methods	3	2	0	0	4
6	17BB22C5	Business Law	3	0	0	0	3
		TOTAL					21

17BB20P1 Project- 6 credits

SEMESTER V

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	17BB31C0	Management Accounting	3	2	0	0	4
2	17HS115	Soft Skills	2	0	2	0	3

3	17BB31C2	Organizational Behaviour	3	0	0	0	3
4	17BB31C3	Marketing Management	3	0	0	0	3
5	17BB31C4	Business analytics	2	4	0	0	4
6	17BB31C5	Project Management	3	2	0	0	4
		TOTAL					21

SEMESTER VI

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	17BB32C0	Operations Management	3	2	0	0	4
2	17BB32C1	Human Resource Management	3	0	0	0	3
3	17BB32C2	Management Information Systems	3	0	0	0	3
4	17BB32C3	Innovation & Entrepreneurship	3	0	0	0	3
5	17BB32C4	Strategic Management	4	0	0	0	4
6	17BB32C5	Management of Cooperatives/	3	0	0	0	3
7	17BB32C6	Management of MNCs/	3	0	0	0	3
8	17BB32C7	Management of SMEs/	3	0	0	0	3
9	17BB32C8	Management of NGOs/	3	0	0	0	3
10	17BB32C9	Management of Family Owned Business	3	0	0	0	3
		TOTAL					**20**

17BB30P2 Project – 6 Credits

BBA-MBA (DUAL DEGREE)

SEMESTER I

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	17HS109	English Language Skills I	2	2	0	0	3
2	17BS114	Business Mathematics	3	2	0	0	4
3	17ES119	Introduction to IT	1	0	4	0	3
4	17HS110	Human Skills	3	0	0	0	3
5	17BB11C4	Perspectives of Management	3	0	0	0	3
6	17BB11C5	Business Case Studies	2	2	0	0	3
		TOTAL					19

SEMESTER II

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	17HS111	English Language Skills II	2	2	0		3
2	17BB12C1	Introduction to Financial Accounting	3	2	0		4
3	17BS115	Business Statistics	3	2	0		4
4	17BB12C3	Indian Business Environment	3	0	0		3
5	17BB12C4	Managerial Economics	3	0	0		3
6	17HS112	Environment Science	3	0	0		2
		TOTAL					19

17BB10P0 Project – 6 Credits

SEMESTER III

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	17BB21C0	Macro Economics	3	0	0		3
2	17BB21C1	Financial Accounting	3	2	0		4
3	17BB21C2	Fundamentals of Income Tax	3	2	0		4
4	17BB21K3	Foreign Language	2	0	2		3
5	17BB21C4	Statistical Data Analysis	1	0	4		3
6	17BB21K5	Business communication	2	2	0		3
		TOTAL					18

SEMESTER IV

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	17BB22C0	Company Law	3	0	0	0	3
2	17BB22C1	Financial Management	3	2	0	0	4
3	17BB22C2	International Business Environment	3	0	0	0	3
4	17BB22C3	Assessment of Direct Taxes	3	2	0	0	4
5	17BB22C4	Business Research Methods	3	2	0	0	4
6	17BB22C5	Business Law	3	0	0	0	3
		TOTAL					21

17BB20P1 Project- 6 credits

SEMESTER V

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	17BB31C0	Management Accounting	4	2	0	0	5
2	17HS115	Soft Skills	2	0	2	0	3
3	17BB31C2	Organizational Behaviour	3	0	0	0	3

4	17BB31C3	Marketing Management	3	0	0	0	3
5	17BB31C4	Business analytics	2	4	0	0	4
6	17BB31C5	Project Management	3	2	0	0	4
		TOTAL					22

SEMESTER VI

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	17BB32C0	Operations Management	3	2	0	0	4
2	17BB32C1	Human Resource Management	3	0	0	0	3
3	17BB32C2	Management Information Systems	3	0	0	0	3
4	17BB32C3	Innovation & Entrepreneurship	3	0	0	0	3
5	17BB32C4	Strategic Management	4	0	0	0	4
6	17BB32C5	Management of Cooperatives/	3	0	0	0	3
7	17BB32C6	Management of MNCs/	3	0	0	0	3
8	17BB32C7	Management of SMEs/	3	0	0	0	3
9	17BB32C8	Management of NGOs/	3	0	0	0	3
10	17BB32C9	Management of Family Owned Business	3	0	0	0	3
		TOTAL					20

17BB30P2 Project – 6 Credits

SEMESTER VII

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	17BB41C0	Corporate Governance	3	0	0	0	3
2	17BB41XX	Elective -1	3	0	0	0	3
3	17BB41XX	Elective -2	3	0	0	0	3
4	17BB41XX	Elective -3	3	0	0	0	3
5	17BB41XX	Elective -4	3	0	0	0	3
6	17BB41XX	Elective (Sectoral)	3	0	0	0	3
		TOTAL					18

SEMESTER VIII

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	17BB42N0	Internship					20
		TOTAL					20

17BB40P4 ERP(6 credits)

SEMESTER IX

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	17BB51E0	Management Application Project	3	0	6	0	6
2	17BB51XX	Elective -1	3	0	0	0	3
3	17MB51XX	Elective 1	3	0	0	0	3
4	17MB51XX	Elective 2	3	0	0	0	3
5	17MB51XX	Elective 3	3	0	0	0	3
6	17MB51XX	Elective (Sectoral)	3	0	0	0	3
		TOTAL					21

SEMESTER X

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	17MB42N0	Internship & Placement					20
		TOTAL					20

Functional Elective Courses

MARKETING

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	17MB61M0	Consumer Behaviour	3	0	0	0	3
2	17MB61M1	Services Marketing	3	0	0	0	3
3	17MB61M2	B2B Marketing	3	0	0	0	3
4	17MB61M3	International Marketing	3	0	0	0	3
5	17MB62M4	Sales and Distribution Management	3	0	0	0	3
6	17MB62M5	Business Analytics in Marketing	3	0	0	0	3
7	17MB62M6	Brand Management	3	0	0	0	3
8	17MB62M7	Customer Relationship Management	3	0	0	0	3

FINANCE

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	17MB61F0	Financial Services and Markets	3	0	0	0	3
2	17MB61F1	Security Analysis& Portfolio Management	2	2	0	0	3
3	17MB61F2	International Financial Management	2	2	0	0	3
4	17MB61F3	Principles of Taxation	2	2	0	0	3
5	17MB62F4	Financial Derivatives (Pre-requisite: Security Analysis)	2	2	0	0	3
6	17MB62F5	Business Analytics in Finance	2	2	0	0	3
7	17MB62F6	Planning and Assessment of Income Tax	2	2	0	0	3
8	17MB62F7	Project Management	2	2	0	0	3

HUMAN RESOURSE MANAGEMENT

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	17MB61H0	Performance Management System	3	0	0	0	3
2	17MB61H1	Training and Development	3	0	0	0	3
3	17MB61H2	Industrial Relations & Labour Legislation	3	0	0	0	3
4	17MB61H3	Leadership in Organizations	3	0	0	0	3
5	17MB62H4	Compensation Management (Pre-requisite: Performance Management Systems)	3	0	0	0	3
6	17MB62H5	Strategic Human Resource Management	3	0	0	0	3
7	17MB62H6	Human Resource Development (Pre-requisite: Training & Development)	3	0	0	0	3
8	17MB62H7	Business Analytics in HR	3	0	0	0	3
9	17MB62H8	Organizational Change & Development	3	0	0	0	3

Business Analytics

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	17MB61U0	Advanced Analytics with R	3	0	0	0	3
2	17MB61U1	Business Analytics in Marketing -I	2	0	2	0	3
3	17MB61U2	Business Analytics in HR -I	2	0	2	0	3
4	17MB61U3	Business Analytics in Finance -I	2	0	2	0	3

5	17MB62U4	Business Forecasting & Econometrics	3	0	0	0	3
6	17MB62U5	Business Analytics in Marketing -II	2	0	2	0	3
7	17MB62U6	Business Analytics in HR –II	2	0	2	0	3
8	17MB62U7	Business Analytics in Finance -II	2	0	2	0	3

Digital Marketing

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	17MB61K0	Media Planning	3	0	0	0	3
2	17MB61K1	SEO	2	0	2	0	3
3	17MB61K2	Affiliate marketing	3	0	0	0	3
4	17MB61K3	Social Media Marketing &Analytics	2	0	2	0	3
5	17MB62K4	Mobile Marketing	3	0	0	0	3
6	17MB62K5	E-Mail & Content Marketing	2	2	0	0	3
7	17MB62K6	E Commerce	3	0	0	0	3
8	17MB62K7	Digital PR & Corporate Commmunication	2	2	0	0	3

Sectoral Elective Courses

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
Retail							
1	17MB61R0	Overview of Retailing	3	0	0	0	3
2	17MB62R1	Management of Retail Operations	3	0	0	0	3
Insurance							
1	17MB62S0	Life Insurance	3	0	0	0	3
2	17MB62S1	General Insurance	3	0	0	0	3
Banking							
1	17MB61B0	Overview of Banking	3	0	0	0	3
2	17MB62B1	Banking Service Operations	3	0	0	0	3
Foreign Trade							
1	17MB61T0	International Logistics Management	3	0	0	0	3
2	17MB62T1	Export & Import Documentation & Insurance	3	0	0	0	3
Healthcare							
1	17MB61D0	Overview of Healthcare Management	3	0	0	0	3
2	17MB62D1	Management of Healthcare Operations	3	0	0	0	3
Information Technology							
1	17MB61I0	IT Enabled Services	3	0	0	0	3
2	17MB62I1	Marketing of Software Solutions (Pre- requisite: Project Management)	3	0	0	0	3
Pharmaceutical Marketing							
1	17MB61P0	Pharmaceutical Marketing Management	3	0	0	0	3
2	17MB62P1	Advanced Pharmaceutical Marketing Management	3	0	0	0	3
Rural and Agricultural Management							
1	17MB61G0	Agriculture & Rural Sectors in india	3	0	0	0	3
2	17MB62G1	Management of Agricultural & Rural Development in India	3	0	0	0	3

BBA LLB

SEMESTER I

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	15BL11C0	General English and Legal Language	3	0	0	0	3
2	15BL11C1	Principles of Management	4	0	0	0	4
3	15BL11C2	Principles of Economics and Managerial	4	0	0	0	4
4	15BL11C3	Economics Law of Torts	4	0	0	0	4
5	15BL11C4	Law of Contracts - I	4	0	0	0	4
6	15BL11C5	Introduction to Law and Legal system	4	0	0	0	4
7	15ES119	Introduction to I.T	2	0	2	0	3
		TOTAL					26

SEMESTER II

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	15BL12C0	Legal Professional Communicatio n Skills (English – II)	3	0	0	0	3
2	15BL12C1	Human Resource Management	4	0	0	0	4
3	15BL12C2	Business Environment	4	0	0	0	4
4	15BL12C3	Corporate Law	4	0	0	0	4
5	15BL12C4	Law of Contracts – II	4	0	0	0	4
6	15BL12C5	Legal and Constitutional History	4	0	0	0	4
7	15BL12C6	Moot Court Training-I	1	0	1	0	2
		TOTAL					26

SEMESTER III

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	15BL21C0	Marketing Management	4	0	0	0	4
2	15BL21C1	Macro Economics	4	0	0	0	4
3	15BL21C2	Financial And Cost Accountancy	4	0	0	0	4
4	15BL21C3	Constitutional Law- I	4	0	0	0	4
5	15BL21C4	Law Of Crimes – I	4	0	0	0	4
6	15BL21C5	Family Law - I	4	0	0	0	4
		TOTAL					24

SEMESTER IV

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	15BL22C0	Dynamics of Social Change	4	0	0	0	4
2	15BL22C1	Financial Management	4	0	0	0	4
3	15BL22C2	Management Information Systems	4	0	0	0	4
4	15BL22C3	Constitutional Law – II	4	0	0	0	4
5	15BL22C4	Administrative Law	4	0	0	0	4
6	15BL22C5	Family Law - II	4	0	0	0	4
7	15BL22C6	Moot Court Training – I	1	0	2	0	4
		TOTAL					24

SEMESTER V

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	15BL31C0	Organisat ional Behaviou r	4	0	0		4
2	15BL31C1	Managem ent Accounting	4	0	0		4
3	15BL31C2	Labour Laws - I	4	0	0		4
4	15BL31C3	Jurisprudence	4	0	0		4
5	15BL31C4	Law of Property	4	0	0		4
6	15BL31C5	Public International Law	4	0	0		4
		TOTAL					24

SEMESTER VI

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	15BL32C0	Quantitative Methods	4	0	0		4
2	15BL32C1	Interpretation of Statutes	4	0	0		4
3	15BL32C2	Labour Laws - II	4	0	0		4
4	15BL32C3	Law of Banking and N.I.Act	4	0	0		4
5	15BL32C4	Human Rights Law	4	0	0		4
6	15BL32C5	Moot Court Training – II	1	0	2		2
7	15BL32C6	Seminar - I	1	0	4		3
		TOTAL					25

15BL32SI1 Summer Internship Program - 3 credits

SEMESTER VII

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	15BL41C0	Intellectual Property Rights	4	0	0	0	4
2	15BL41C1	Law of Taxation	4	0	0	0	4
3	15BL41C2	Law of Insurance	4	0	0	0	4
4	15BL41C3	Environmental Law	4	0	0	0	4
5	15BL41C4	Cyber Law	4	0	0	0	4
6	15BL41C5	Seminar - II	1	0	4	0	3
		TOTAL					23

SEMESTER VIII

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	15BL42C0	Code of Civil Procedure and Law of Limitation	4	0	0		4
2	15BL42C1	Law of Crimes – II	4	0	0		4
3	15BL42C2	Law of Evidence	4	0	0		4
4	15BL42C3	Theories of Justice	4	0	0		4
5	15BL42C4	Right to Information Act	4	0	0		4
6	15BL42C5	Moot Court Training - III	1	0	2		2
	15BL42C6	Seminar - III	1	0	4		3
		TOTAL					25

15 BL32S12 Summer Internship Program – 3 Credits

SEMESTER IX

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	15BL52C0	Professional Ethics and Professional Accountancy system	3	2	0		4
2	15BL52C1	Moot Court Exercises	4	4	4		8
3	15BL52C2	Gender Justice and Feminist	4	0	0		4
4	15BL52C3	Jurisprudence Final Internship	0	0	1		8
		Total					24

BACHELOR OF ARTS (BA)

SEMESTER I

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	15EN1101	Rudiments of Communication Skills	0	0	4	0	2
2	16GN11T1	Telugu-1/	3	0	0	0	3
3	16GN11H1	Hindi-1	3	0	0	0	3
4	16BA1101	Ancient Indian History	4	1	0	0	5
5	16BA1102	Micro Economics	4	1	0	0	5
6	16BA1104	Physical Geography	4	1	0	0	5
7	16BA1105	History of English Language and Literature	4	1	0	0	5
8	16BA1103	Public Administration	4	1	0	0	5
9	16BA11C1	General science-1*	4	0	0	0	-
10	16BA11C2	Indian Polity *	5	0	0	0	-
11	16BA11C3	GK & Current affairs*	3	0	0	0	-
12	16BA11C4	Quantitative Aptitude and Reasoning (C-SAT) -1*	2	2	0	0	-
		TOTAL					20

SEMESTER II

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	15EN1202	Interpersonal Communication Skills	0	0	4		2
2	16GN12T2	Telugu-2/	5	1	0	0	6
3	16GN12H2	Hindi-2	5	1	0	0	6
4	16BA1201	Medieval Indian History	5	1	0	0	6
5	16BA1202	Macro Economics	4	0	0	0	4
6	16BA1204	Human Geography	4	0	0	0	4
7	16BA1205	Age of Renaissance and commonwealth	4	0	0	0	4
8	16BA1203	Introduction to Public Administration- II	5	1	0	0	6
9	16BA12C1	Planning and Development *	5	0	0	0	-
10	16BA12C2	GK & Current affairs - II*	3	0	0	0	-
11	16BA12C4	Quantitative Aptitude and Reasoning (C-SAT) -2*	2	2	0	0	-
		TOTAL					24

SEMESTER III

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	18GN21E3	English Language Proficiency	3	0	2	0	2
2	16GN21T3	Telugu-3	3	0	0	0	4
3	16GN21H3	Hindi-3	3	0	0	0	4
4	16GN2102	Computer Skills	0	0	4	0	2
5	16BA2101	Indian History & Culture 1526-1857	4	1	0	0	5
6	16BA2102	Indian Economy-Problems & Policies	4	1	0	0	5

7	16BA2104	Geography of India-1	4	1	0	0	5
8	16BA2105	English Literature in Context-II(1620-1850)	4	1	0	0	5
9	16BA2103	Union Administration	4	1	0	0	5
10	16BA21C2	Indian Geography*	5	0	0	0	-
11	16BA21C3	G.K & Current Affairs*	3	0	0	0	-
		TOTAL					24

SEMESTER IV

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	16GN2201	Environment Studies	2	0	0	0	2
2	16GN22E4	Campus to Competitive World	3	0	2	0	4
3	16GN2203	Soft Skills	2	0	0	0	2
4	16BA2201	Indian History & Culture 1857-1947	4	1	0	0	5
5	16BA2202	Economic Development Theory & Practice	4	1	0	0	5
6	16BA2204	Geography of India-2	4	1	0	0	5
7	16BA2205	English Literature in Context-III(1820-1950)	4	1	0	0	5
8	16BA2203	State and Local Administration	4	1	0	0	5
9	16BA22C2	World Geography*	5	0	0	0	-
10	16BA22C3	G.K & Current Affairs	2	2	0	0	-
		TOTAL					24

SEMESTER V

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	16GN3102	Science & Technology	2	0	0	0	2
2	16UC0007	Indian Heritage & Culture	2	0	0	0	2
3	16BA3101	History of Modern World	4	1	0	0	5
4	16BA3103	Management of Resources	4	1	0	0	5
5	16BA3102	International Economic Order	4	1	0	0	5
6	16BA3104	Remote Sensing and Geographic Information System	4	1	0	0	5
7	16BA3105	English literature in Context(Post modern age)	4	1	0	0	5
8	16BA31C2	GK & Current Affairs*	3	2	0	0	0
9	16BA31C3	Data Interpretation*	2	0	2	0	0
10	16UC0010	Universal Human Values and Professional Ethics	2	0	2	0	3
		TOTAL					23

SEMESTER VI

SNO	COURSECODE	COURSE NAME	L	T	P	S	CR
1	16GN3201	Disaster Management	3	0	0	0	3
2	16BA3201	Project Work	0	0	12	0	6
3	16BA32C1	General Essay*	3	2	0	0	0
4	16BA3202	Archeology	4	1	0	0	5
5	16BA3203	History and Culture of Andhra Pradesh	4	1	0	0	5
6	16BA3206	Indian Polity and Governance	4	1	0	0	5
7	16BA3207	E-Governance	4	1	0	0	5

8	16BA3204	Economic Data and Interpretation	4	1	0	0	5
9	16BA3205	Human Resource and Economic Development	4	1	0	0	5
10	16BA3208	Regional Geography of India	4	1	0	0	5
11	16BA3209	Contemporary Issues in Geography	4	1	0	0	5
12	16BA3210	Academic Research-Dissertation	4	1	0	0	5
13	16BA3210	Academic Research-Publications & Book review	4	1	0	0	5
14	16BA32C2	G.K & Current Affairs*	3	0	0	0	0
15	16BA32C3	International Relations*	2	0	0	0	0
		TOTAL					24

HOTEL MANAGEMENT

SEMESTER I

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	15HS101	Rudiments of Communication Skills	0	0	4	0	2
2	15BH11C6	Introduction to Food Production	2	0	4	0	4
3	15BH11C7	Introduction to Food & Beverage Service	2	0	2	0	3
4	15BH11C8	Introduction to House Keeping	2	0	2	0	3
5	15BH11C9	Introduction to Front Office	2	0	2	0	3
6	16BH11K0	Food Safety & Hygiene	3	0	0	0	3
7	15BH11I0	Introduction to Information Technology	2	0	2	0	3
		TOTAL					21

SEMESTER II

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	15HS102	Interpersonal Communication Skills	0	0	4	0	2
2	15BH12C6	Principles of Food Production	2	0	4	0	4
3	15BH12C7	Principles of Food & Beverage Service	2	0	2	0	3
4	15BH12C8	Principles of House Keeping	2	0	2	0	3
5	15BH12C9	Principles of Front Office	2	0	2	0	3
6	16BH12K0	Food Science & Nutrition	3	0	0	0	3
		TOTAL					18

15BH10N0 –Basic Training (4 Credits)

SEMESTER III

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	15HS103	Professional Communication Skills	0	0	4	0	2
2	15BH21C6	Food Production Operations	2	0	4	0	4
3	15BH21C7	Food & Beverage Services Operations	2	0	2	0	3
4	15BH21C8	Accommodation Operations	2	0	2	0	3
5	15BH21K1	Hotel Laws	3	0	0	0	3
6	15BH21F0	Hotel Accountancy	3	0	0	0	3

7	15HS107	Environmental Studies	3	0	0	0	3
		TOTAL					21

SEMESTER IV

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	15HS104	Employability Skills	0	0	4	0	2
2	15BH22C6	Food Production Management	2	0	4	0	4
3	15BH22C7	Food & Beverage Services Management	2	0	2	0	3
4	15BH22C8	Accommodation Management	2	0	2	0	3
5	15BH22K0	Hotel Engineering	3	0	0	0	3
6	16BH22K1	Food & Beverage Quality Control	3	0	0	0	3
		TOTAL					18

15BH20N0 –Industrial Training (4 Credits)

SEMESTER V

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	15HS105	Verbal & Quantitative reasoning	0	0	4	0	2
2	15BH31C6	Advanced Food Production	2	0	4	0	4
3	15BH31C7	Advanced Food & Beverage Services	2	0	2	0	3
4	16BH31K0	Hospitality Services Marketing	3	0	0	0	3
5	16BH31K1	Human Resource Management In Service Sector	3	0	0	0	3
6	16BH31K2	Travel & Tourism	3	0	0	0	3
7	16BH31L0	French for Hotel Professionals	3	0	0	0	3
		TOTAL					21

SEMESTER VI

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	15BH32N0	Intensive Internship 4 Months					20
		TOTAL					20

SEMESTER VII

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	15HS106	Corporate Communication Skills	0	0	4	0	2

2	15BH41K0	Total Quality Management	3	0	0	0	3
3	15BH41K1	Customer Relationship Management	3	0	0	0	3
4	15BH41K2	Entrepreneurship	3	0	0	0	3
5	16BH41K3	Organization Behavior In Hospitality Industry	3	0	0	0	3
6	15BH41XX	Elective - I	2	0	2	0	3
7	15BH41XX	Elective - II	2	0	2	0	3
		TOTAL					20

SEMESTER VIII

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	15BH42P0	Hotel Industry Project 4 Months					20
		TOTAL					20

Electives –I

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	15BH41E0	Food Production Management - I	1	0	4	0	3
2	15BH41E1	Food & Beverage Services Management - I	2	0	2	0	3
3	15BH41E2	Accommodation Management - I	2	0	2	0	3

Electives –I

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	15BH41E3	Food Production Management - II	1	0	4	0	3
2	15BH41E4	Food & Beverage Services Management - II	2	0	2	0	3
3	15BH41E5	Accommodation Management - II	2	0	2	0	3

MASTER OF BUSINESS ADMINISTRATION (MBA)

SEMESTER I

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17MB51C0	Quantitative Methods	3	0	0	0	3
2	17MB51C1	Indian Business Environment	3	0	0	0	3
3	17MB51C2	Managerial Economics	3	0	0	0	3
4	17MB51C3	Financial and Management Accounting	2	2	0	0	3
5	17MB51C4	Marketing Management	3	0	0	0	3
6	17MB51C5	Organizational Behavior	3	0	0	0	3
7	17ES120	Information Systems	2	0	2	0	3
8	17HS113	Soft Skills for Managers	2	0	2	0	3
		TOTAL					24

SEMESTER II

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17MB52C0	Human Resource Management	3	0	0	0	3
2	17MB52C1	Financial Management	2	2	0	0	3
3	17MB52C2	Business Research Methodology	3	0	0	0	3
4	17MB52C3	Introduction to Business Analytics	3	0	0	0	3
5	17MB52C4	Operations Management	3	0	0	0	3
6	17MB52C5	Business Legislation	3	0	0	0	3
7	17MB52C6	Enterprise Resource Planning	3	0	0	0	3
8	17MB52K7	Business Communication	1	2	0	0	2
		TOTAL					23

SEMESTER III

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17MB61C0	Strategic Management	3	0	0	0	3
2	17MB61C1	International Business Environment	3	0	0	0	3
3	17MB61xx	Elective -1	3	0	0	0	3
4	17MB61xx	Elective -2	3	0	0	0	3
5	17MB61xx	Elective -3	3	0	0	0	3
6	17MB61xx	Elective -4	3	0	0	0	3
7	17MB61xx	Sectoral Elective 1	3	0	0	0	3
	17MB62E8	Management Research Project	3	0	6	0	6
		Project					
		TOTAL					27

SEMESTER IV

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17MB62C0	Management Control Systems	3	0	0	0	3
2	17MB62C1	Business Ethics & Corporate Governance	3	0	0	0	3
3	17MB62C2	Entrepreneurship	3	0	0	0	3
4	17MB62xx	Elective 1	3	0	0	0	3
5	17MB62xx	Elective 2	3	0	0	0	3
6	17MB62xx	Elective 3	3	0	0	0	3
7	17MB62xx	Elective 4	3	0	0	0	3
8	17MB62xx	Sectoral Elective 2	3	0	0	0	3
		TOTAL					24

FUNCTIONAL ELECTIVE COURSES

MARKETING

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17MB61M0	Consumer Behaviour	3	0	0	0	3
2	17MB61M1	Services Marketing	3	0	0	0	3
3	17MB61M2	B2B Marketing	3	0	0	0	3
4	17MB61M3	International Marketing	3	0	0	0	3
5	17MB62M4	Sales and Distribution Management	3	0	0	0	3
6	17MB62M5	Business Analytics in Marketing	3	0	0	0	3
7	17MB62M6	Brand Management	3	0	0	0	3
8	17MB62M7	Customer Relationship Management	3	0	0	0	3

FINANCE

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17MB61F0	Financial Services and Markets	3	0	0	0	3
2	17MB61F1	Security Analysis& Portfolio Management	2	2	0	0	3
3	17MB61F2	International Financial Management	2	2	0	0	3
4	17MB61F3	Principles of Taxation	2	2	0	0	3
5	17MB62F4	Financial Derivatives (Pre-requisite: Security Analysis)	2	2	0	0	3
6	17MB62F5	Business Analytics in Finance	2	2	0	0	3
7	17MB62F6	Planning and Assessment of Income Tax	2	2	0	0	3
8	17MB62F7	Project Management	2	2	0	0	3

HUMAN RESOURCE MANAGEMENT

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17MB61H0	Performance Management System	3	0	0	0	3
2	17MB61H1	Training and Development	3	0	0	0	3
3	17MB61H2	Industrial Relations & Labour Legislation	3	0	0	0	3
4	17MB61H3	Leadership in Organizations	3	0	0	0	3
5	17MB62H4	Compensation Management (Pre-requisite: Performance Management Systems)	3	0	0	0	3
6	17MB62H5	Strategic Human Resource Management	3	0	0	0	3
7	17MB62H6	Human Resource Development (Pre-requisite: Training & Development)	3	0	0	0	3
8	17MB62H7	Business Analytics in HR	3	0	0	0	3
9	17MB62H8	Organizational Change & Development	3	0	0	0	3

BUSINESS ANALYTICS

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17MB61U0	Advanced Analytics with R	3	0	0	0	3
2	17MB61U1	Business Analytics in Marketing -I	2	0	2	0	3
3	17MB61U2	Business Analytics in HR -I	2	0	2	0	3
4	17MB61U3	Business Analytics in Finance -I	2	0	2	0	3
5	17MB62U4	Business Forecasting & Econometrics	3	0	0	0	3
6	17MB62U5	Business Analytics in Marketing -II	2	0	2	0	3
7	17MB62U6	Business Analytics in HR –II	2	0	2	0	3
8	17MB62U7	Business Analytics in Finance -II	2	0	2	0	3

DIGITAL MARKETING

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17MB61K0	Media Planning	3	0	0	0	3
2	17MB61K1	SEO	2	0	2	0	3
3	17MB61K2	Affiliate marketing	3	0	0	0	3
4	17MB61K3	Social Media Marketing &Analytics	2	0	2	0	3
5	17MB62K4	Mobile Marketing	3	0	0	0	3
6	17MB62K5	E-Mail & Content Marketing	2	2	0	0	3
7	17MB62K6	E Commerce	3	0	0	0	3
8	17MB62K7	Digital PR & Corporate Commmunication	2	2	0	0	3

SECTORAL ELECTIVE COURSES

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
Retail							
1	17MB61R0	Overview of Retailing	3	0	0	0	3
2	17MB62R1	Management of Retail Operations	3	0	0	0	3
Insurance							
1	17MB62S0	Life Insurance	3	0	0	0	3
2	17MB62S1	General Insurance	3	0	0	0	3
Banking							
1	17MB61B0	Overview of Banking	3	0	0	0	3
2	17MB62B1	Banking Service Operations	3	0	0	0	3
Foreign Trade							
1	17MB61T0	International Logistics Management	3	0	0	0	3
2	17MB62T1	Export & Import Documentation & Insurance	3	0	0	0	3
Healthcare							
1	17MB61D0	Overview of Healthcare Management	3	0	0	0	3
2	17MB62D1	Management of Healthcare Operations	3	0	0	0	3
Information Technology							
1	17MB61I0	IT Enabled Services	3	0	0	0	3
2	17MB62I1	Marketing of Software Solutions (Pre-requisite: Project Management)	3	0	0	0	3
Digital Marketing							
1	17MB61L0	Overview of Digital Marketing	3	0	0	0	3
2	17MB62L1	Advanced Digital Marketing	3	0	0	0	3
Rural and Agricultural Management							
1	17MB61G0	Overview of Agriculture & Rural Sectors in india	3	0	0	0	3
2	17MB62G1	Management of Agricultural & Rural Development in India	3	0	0	0	3
Pharmaceutical Marketing							
1	17MB61P0	Pharmaceutical Marketing Management	3	0	0	0	3
2	17MB62P1	Advanced Pharmaceutical Marketing Management	3	0	0	0	3
Business Analytics							
1	17MB61A0	Overview of Business Analytics	3	0	0	0	3
2	17MB62A1	Advanced Business Analytics	3	0	0	0	3

M.SC. CHEMISTRY

SEMESTER I

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	16 CY 1101	General Chemistry-I	4	0	0	0	4
2	16 CY 1102	Inorganic Chemistry- I	4	0	6	0	7
3	16 CY 1103	Organic Chemistr-I	4	0	6	0	7
4	16 CY 1104	Physical Chemistry-I	4	0	6	0	7
		TOTAL					25

SEMESTER II

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	16 CY 1205	General Chemistry-II	4	0	0	0	4
2	16 CY 1206	Inorganic Chemistry- II	4	0	6	0	7
3	16 CY 1207	Organic Chemistry-II	4	0	6	0	7
4	16 CY 1208	Physical Chemistry-II	4	0	6	0	7
		TOTAL					25

SEMESTER III (ORGANIC SPECIALIZATION)

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	16 CY 2109	Organic Reaction Mechanisms and pericyclic reactions	4	0	0	0	4
2	16 CY 2110	Organic Spectroscopy - I	4	0	0	0	4
3	16 CY 2111	Organic Synthesis-I	4	0	6	0	7
4	16 CY 2112	Natural Products	4	0	6	0	7
		TOTAL					25

SEMESTER IV(ORGANIC SPECIALIZATION)

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	16 CY 2214	Organic Reaction Mechanisms and organic photochemistry	4	0	0	0	4
2	16 CY 2215	Organic Spectroscopy - 2	4	0	0	0	4
3	16 CY 2216	Organic Synthesis-2	4	0	6	0	7
4	16 CY 2217	Techniques for modern industrial applications	4	0	6	0	7
5	16 CY2218	Research Methodology -2	0	0	6	0	3
		TOTAL					25

SEMESTER III (ANALYTICAL CHEMISTRY SPECIALIZATION)

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	16 CY 2119	Separation Techniques -I	4	0	0	0	4
2	16 CY 2120	Quality Control and Traditional Methods of Analysis-I	4	0	0	0	4
3	16 CY 2121	Applied Analysis-I	4	0	6	0	7
4	16 CY 2122	Instrumental Methods of Analysis - I	4	0	6	0	7
		total					22

SEMESTER IV(ANALYTICAL CHEMISTRY SPECIALIZATION)

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	16 CY2224	Separation Methods – II	4	0	0	0	4
2	16 CY2225	Traditional Methods of Analysis- II	4	0	0	0	4
3	16 CY2226	Applied Analysis – II	4	0	6	0	7
4	16 CY2227	Instrumental Methods of Analysis -II	4	0	6	0	7
5	16 CY2228	Dissertation	0	0	6	0	3
		total					25

M.SC (PHYSICS)

SEMESTER I

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17PH5101	Mathematical Physics	3	2	0	0	4
2	17PH5102	Classical Mechanics	3	2	0	0	4
3	17PH5103	Quantum Mechanics - 1	3	2	0	0	4
4	17PH5104	Electronics	3	2	6	0	7
5	17PH5105	Modern Physics Lab-1	0	0	6	0	3
		total					22

SEMESTER II

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17PH5201	Statistical Mechanics	3	2	0	0	4
2	17PH5202	Quantum Mechanics - 2	3	2	0	0	4
3	17PH5203	Electromagnetic Theory and Modern Optics	3	2	6	0	7
4	17PH5204	Solid State Physics-1	3	2	0	0	4
5	17PH5205	Computational Methods and Programming	2	0	4	0	4
6	17PH5206	Seminar	0	0	2	0	1
		total					24

SEMESTER III

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17PH53E(-)	Elective-1	2	2	0	0	3
2	17PH5301	Atomic and Molecular Physics	3	2	0	0	4
3	17PH5302	Solid State Physics -2	3	2	6	0	7
4	17PH5303	Digital Electronics and Microprocessors	3	2	6	0	7
5	17PH5304	Term paper	0	0	2	0	1
		TOTAL					22

SEMESTER IV

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17PH54E(-)	Elective-2	2	2	0	0	3
2	17PH54E(-)	Elective-3	2	2	0	0	3
3	17PH5401	Dissertation	0	0	24	0	12
		total					25

ELECTIVE COURSES

ELECTIVE I

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17PH53E1	Nuclear and Particle Physics	2	2	0	0	3
2	17PH53E2	Radar Systems and Satellite communication	2	2	0	0	3
3	17PH53E3	Fiber Optic Sensor	2	2	0	0	3

ELECTIVE II

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17PH54E1	Nano science and Technology	2	2	0	0	3
2	17PH54E2	Antenna theory and Radio wave Propagation	2	2	0	0	3
3	17PH54E3	Climate change	2	2	0	0	3
4	17PH54E4	Thin Film Technology	2	2	0	0	3

ELECTIVE III

SNO	COURSE CODE	COURSE NAME	L	T	P	S	CR
1	17PH54E5	Instrumentation	2	2	0	0	3
2	17PH54E6	Glass Science and Technology	2	2	0	0	3
3	17PH54E7	Micro-Electro- Mechanical Systems	2	2	0	0	3
4	17PH54E8	Weather Hazards & Risk Assessment	2	2	0	0	3

M. TECH – BIOTECHNOLOGY

First Year (First Semester):

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
1	15 BT 5101	Mathematics and Biostatistics	3	2	0	4
2	15 BT 5102	Biochemical Engineering	3	0	2	4
3	15 BT 5103	Molecular Biology and r-DNA Technology	3	0	2	4
4	15 BT 5104	Applied Bioinformatics	3	0	2	4
5		Elective 1	3	0	0	3
6		Elective 2	3	0	0	3
7	15 IE 5148	Seminar/Term Paper	0	0	4	2
		Total Credits	24			

First Year (Second Semester) :

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
1	15 BT 5205	Plant and Animal Biotechnology	3	0	2	4
2	15 BT 5206	Immuno technology	3	0	2	4
3	15 BT 5207	Bioreactor modeling and Simulation	3	2	0	4
4	15 BT 5208	Downstream Processing	3	0	2	4
5		Elective 3	3	0	0	3
6		Elective 4	3	0	0	3
7	15 IE 5250	Term Paper	0	0	4	2
		Total Credits	24			

Second Year (First & Second Semester) :

S.No	Corse Code	Course Title	Periods			Credits
			L	T	P	
1	15 IE 6050	Dissertation	0	0	72	36

ELECTIVE COURSES

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
Elective-1						
1	15 BT 51A1	Protein Engineering	3	0	0	3
2	15 BT 51A2	Enzyme Technology	3	0	0	3
3	15 BT 51A3	Medical Biotechnology	3	0	0	3
4	15 BT 51A4	Stem cell technology	3	0	0	3

5	15 BT 51A5	Molecular Modeling and Drug Design	3	0	0	3
Elective-2						
6	15 BT 51B1	Food Technology	3	0	0	3
7	15 BT 51B2	Transport phenomenon in bioprocess	3	0	0	3
8	15 BT 51B3	Bio mining	3	0	0	3
9	15 BT 51B4	Bioprocess validation and cGMP	3	0	0	3
Elective-3						
10	15 BT 52C1	Perl programming and Bioperl	3	0	0	3
11	15 BT 52C2	Bioprocess Technology	3	0	0	3
12	15 BT 52C3	Environmental Biotechnology	3	0	0	3
13	15 BT 52C4	Nano Technology	3	0	0	3
14	15 BT 52C5	IPR and Patent Laws	3	0	0	3
Elective-4						
15	15 BT 52D1	Regulatory affairs & Clinical trials	3	0	0	3
16	15 BT 52D2	Bioprocess economics and plant design	3	0	0	3
17	15 BT 52D3	Genomics and Proteomics	3	0	0	3
18	15 BT 52D4	Bio catalysis and enzyme	3	0	0	3

M-TECH - STRUCTURAL ENGINEERING

First Year [First Semester]						
S No	**Code**	**Course Title**	**L**	**T**	**P**	**Cr**
1	15 CE 5101	Applied Mathematics	3	2	0	4
2	15 CE 5102	Theory of Elasticity	3	2	0	4
3	15 CE 5103	Structural Dynamics	3	0	2	4
4	15 CE 5104	Advanced Prestressed Concrete	3	0	2	4
5		Elective – I				
6		Elective – II	3	0	0	3
7	15 CE 5148	Seminar	0	0	4	2
		Total Credits:				24

First Year [Second Semester]						
S No	**Code**	**Course Title**	**L**	**T**	**P**	**Cr**
1	15 CE 5205	Finite Element Analysis	3	0	2	4
2	15 CE 5206	Bridge Engineering	3	2	0	4
3	15 CE 5207	Earthquake Resistant Design of Structures	3	0	2	4
4	15 CE 5208	Theory of Plates and Shells	3	2	0	4
5		Elective – III				
6		Elective – IV				
7	15 IE 5250	Term Paper	0	0	4	2
		Total Credits:				24

Second Year						
S No	**Code**	**Course Title**	**L**	**T**	**P**	**Cr**
1	15 IE 6050	DISSERTATION	0	0	72	36
		Total Credits:				36

ELECTIVE COURSES

S.No	**Course code**	**Course Title**	**Periods**			**Credits**
			L	**T**	**P**	
Elective-1						
1	15 CE 51A1	Repair and Rehabilitation of structures	3	0	0	3
2	15 CE 51A2	Design of Offshore structures	3	0	0	3
Elective-2						
1	15 CE 51B1	Geotechnical Earthquake Engineering	3	0	0	3
2	15 CE 51B2	Stability of Structures	3	0	0	3

Elective-3						
1	15 CE 52C1	Industrial Structures	3	0	0	3
2	15 CE 52C2	Design of Tall Structures	3	0	0	3
3	15 CE 52C3	Optimization of Structures3	3	0	0	3
Elective-4						
1	15 CE 52D1	Advanced Design of structures	3	0	0	3
2	15 CE 52D2	Fracture Mechanics	3	0	0	3
3	15 CE 52D3	Green Buildings	3	0	0	3

M. TECH - GEOSPATIAL TECHNOLOGY

First Year (First Semester*):*

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
1	15 CE 5109	Fundamentals of Geospatial Technology	3	0	2	4
2	15 CE 5110	Geographical Information System	3	0	2	4
3	15 CE 5111	Advanced computer Programming and Statistics	3	2	0	4
4	15 CE 5112	Photogrammetry	3	2	0	4
5		Elective 1	3	0	0	3
6		Elective 2	3	0	0	3
7	15 IE 5148	Seminar	0	0	4	2
		Total Credits	24			

First Year (Second Semester) :

S.No	Course code	Course Title	Periods			Credits
			L	**T**	**P**	
1	15 CE 5213	Digital Image Processing	3	0	2	4
2	15 CE 5214	GIS Data Analysis & Modelling	3	0	2	4
3	15 CE 5215	Geodesy and GPS	3	2	0	4
4	15 CE 5216	Geospatial Applications	3	2	0	4
5		Elective 3	3	0	0	3
6		Elective 4	3	0	0	3
7	15 IE 5250	Term Paper	0	0	4	2
		Total Credits	24			

Second Year (First & Second Semester) :

S.No	Course code	Course Title	Periods			Credits
			L	**T**	**P**	
1	15 IE 6050	Dissertation	0	0	72	36

ELECTIVE COURSES

S.No	Course code	Course Title	Periods			Credits
			L	**T**	**P**	

Elective-1						
1	15 CE 51E1	Principles of Earth & Environment Sciences	3	0	0	3
2	15 CE 51E2	Geoinformatics for Water Resource Management	3	0	0	3
3	15 CE 51E3	Data base Management system(DBMS)	3	0	0	3
4	15 CE 51E4	Topographical Surveying	3	0	0	3
Elective-2						
1	15 CE 51F1	Advanced Surveying and cartography	3	0	0	3
2	15 CE 51F2	Environmental Geoinformatics	3	0	0	3
3	15 CE 51F3	Structural Analysis using Geomatics	3	0	0	3
4	15 CE 51F4	Geospatial Technology for Transport Engineering	3	0	0	3
Elective-3						
1	15 CE52G1	Statistics and Adjustment Computations	3	0	0	3
2	15 CE52G2	Cadastral survey' and information system	3	0	0	3
3	15 CE52G3	Engineering Survey Methodology and Instrumentation	3	0	0	3
4	15 CE52G4	Geospatial Technology for Natural Resources &Disaster Management	3	0	0	3
Elective-4						
1	15 CE 52H1	Coordinate systems and Map Projections	3	0	0	3
2	15 CE 52H2	Principles of Geomatics	3	0	0	3
3	15 CE 52H3	Geospatial Technology for Rural Development	3	0	0	3
4	15 CE 52H4	Urban Water Management using Geomatics	3	0	0	3

M. TECH - CONSTRUCTION TECHNOLOGY AND MANAGEMENT

First Year (First Semester):

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
1	15 CE 5117	Construction Technology	3	0	2	4
2	15 CE 5118	Construction Materials	3	2	0	4
3	15 CE 5119	Construction Planning Scheduling and Control	3	0	2	4
4	15 CE 5120	Statistical Methods for Management	3	2	0	4
5		Elective 1	3	0	0	3
6		Elective 2	3	0	0	3
7	15 IE 5148	Seminar	0	0	4	2
		Total Credits	24			

First Year (Second Semester) :

S.No	Course code	Course Title	Periods			Credits
			L	**T**	**P**	
1	15 CE 5221	Mechanized Construction and Machinery	3	0	2	4
2	15 CE 5222	Project Formulation Appraisal	3	2	0	4

3	15 CE 5223	Construction Laws and Regulations	3	2	0	4
4	15 CE 5224	Quality Management and Safety Management Systems in Construction	3	0	2	4
5		Elective 3	3	0	0	3
6		Elective 4	3	0	0	3
7	15 IE 5250	Term Paper	0	0	4	2
		Total Credits	24			

Second Year (First & Second Semester) :

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
1	15 IE 6050	Dissertation	0	0	72	36

ELECTIVE COURSES

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
Elective-1						
1	15 CE 51I1	High Performance Buildings	3	0	0	3
2	15 CE 51I2	Precast Concrete Structure	3	0	0	3
3	15 CE 51I3	Special Concrete	3	0	0	3
4	15 CE 51I4	Structural Health Monitoring	3	0	0	3
Elective-2						
1	15 CE 51J1	Construction Personnel Management	3	0	0	3
2	15 CE 51J2	Building Services, Maintenance Management	3	0	0	3
3	15 CE 51J3	Infrastructure Valuation	3	0	0	3
4	15 CE 51J4	Construction Economics & Finance	3	0	0	3
Elective-3						
1	15 CE 52K1	Environmental Impact Assessment onbuilt Environment	3	0	0	3
2	15 CE 52K2	Deep Excavations and ground water control methods	3	0	0	3
3	15 CE 52K3	Mass Transport Systems	3	0	0	3
4	15 CE 52K4	Form Work for Construction Structures	3	0	0	3
Elective-4						
1	15 CE 52L1	Emerging construction Technologies	3	0	0	3
2	15 CE 52L2	Building Envelopes	3	0	0	3
3	15 CE 52L3	Construction and fire safety	3	0	0	3
4	15 CE 52L4	Resource Management and Control In Construction	3	0	0	3

M.TECH - COMPUTER SCIENCE & ENGINEERING

First Year (First Semester):

S. No.	Course Code	Course Title	Periods			Contact Hours	Credits
			L	T	P		
1	15 CS 5101	MathematicalFoundationsof ComputerScience	3	2	0		4
2	15 CS 5102	ComputerOrganization&Architecture	3	2	0		4
3	15 CS 5103	DataStructures&Algorithms	3	0	2		4
4	15 CS5104	DistributedDatabaseManagementSystem	3	0	2		4
5		Elective – 1	3	0	0		3
6		Elective - 2	3	0	0		3
7	15 IE 5149	Seminar	0	0	4		2
		Total	**18**	**4**	**8**		**24**

First Year (Second Semester) :

S. No.	Course Code	Course Title	Periods			Contact Hours	Credits
			L	T	P		
1	15 CS 5205	OperatingSystemDesign	3	2	0		4
2	15 CS 5206	ComputerNetworks&Security	3	2	0		4
3	15 CS 5207	ObjectOrientedAnalysis and Design	3	0	2		4
4	15 CS 5208	EnterpriseProgramming	3	0	2		4
5		Elective – 3	3	0	0		3
6		Elective - 4	3	0	0		3
7	15 IE 5250	Term Paper	0	0	4		2
		Total	**18**	**4**	**8**		**24**

Second Year (First & Second Semester) :

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
1	15 IE 6050	Dissertation	0	0	72	36

ELECTIVE COURSES

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
Elective-1						
1	15 CS 51A1	SoftComputing	3	0	0	3
2	15 CS 51A2	MachineLearning and pattern Classification	3	0	0	3
3	15 CS 51A3	DataMining	3	0	0	3
4	15 CS 51A4	NaturalLanguageProcessing	3	0	0	3
Elective-2						

1	15 CS 51B1	RequirementsEngineering	3	0	0	3
2	15 CS 51B2	Principlesof Programming Languages	3	0	0	3
3	15 CS 51B3	CompilerDesign	3	0	0	3
4	15 CS 51B4	SoftwareTesting&QualityAssurance	3	0	0	3
Elective-3						
1	15 CS 52C1	Cryptography&NetworkSecurity	3	0	0	3
2	15 CS 52C2	Mobilecomputing	3	0	0	3
3	15 CS 52C3	High Performance Computing	3	0	0	3
4	15 CS 52C4	Network management Systems	3	0	0	3
Elective-4						
1	15 CS 52D1	ServiceOrientedArchitecture	3	0	0	3
2	15 CS 52D2	VisualProgramming	3	0	0	3
3	15 CS 52D3	DigitalImageProcessing	3	0	0	3
4	15 CS 52D4	BigData Analytics	3	0	0	3

M.TECH - COMPUTER NETWORKS & SECURITY

First Year (First Semester):

S. No.	Course Code	Course Title	Periods			Credits
			L	T	P	
1	15CS5109	Data Networks	**3**	**2**	**0**	4
2	15CS5110	Network Programming	**3**	**0**	**2**	4
3	15CS5111	Applied Cryptography	**3**	**0**	**2**	4
4	15CS5112	Secure Coding	**3**	**2**	**0**	4
5		Elective – 1	3	0	0	3
6		Elective - 2	3	0	0	3
7	15 IE 5149	Seminar	0	0	4	2
		Total	**18**	**4**	**8**	**24**

First Year (Second Semester) :

S.No.	Course Code	Course Title	Periods			Credits
			L	T	P	
1	15 CS 5213	PerformanceAnalysisofComputerNetworks	**3**	**2**	**0**	4

2	15 CS 5214	WirelessNetworks&Mobile Computing	**3**	**0**	**2**	4
3	15 CS 5215	Network and Cyber Security	**3**	**0**	**2**	4
4	15 CS 5216	WirelessNetwork Security	**3**	**2**	**0**	4
5		Elective – 3	3	0	0	3
6		Elective - 4	3	0	0	3
7	15 IE 5250	Term Paper	0	0	4	2
Total			**18**	**4**	**8**	**24**

Second Year (First & Second Semester) :

S.No	Course code	Course Title	Periods			Credits
			L	**T**	**P**	
1	15 IE 6050	Dissertation	0	0	72	36

ELECTIVE COURSES

S.No	Course code	Course Title	Periods			Credits
			L	**T**	**P**	
Elective-1						
1	15 CS 51E1	Network Routing	3	0	0	3
2	15 CS 51E2	Network Optimization	3	0	0	3
3	15 CS 51E3	Simulation of ComputerNetwork	3	0	0	3
4	15 CS 51E4	ProgrammingMobile Devices	3	0	0	3
Elective-2						
1	15 CS 51F1	StorageArea Networks	3	0	0	3
2	15 CS 51F2	AdhocNetworks	3	0	0	3
3	15 CS 51F3	Cognitive Radio Networks	3	0	0	3
4	15 CS 51F4	SensorNetworks	3	0	0	3
Elective-3						
1	15 CS 52G1	Secure ProtocolsDesign	3	0	0	3
2	15 CS 52G2	DistributedSystem Security	3	0	0	3
3	15 CS 52G3	Elliptic Curve Cryptography	3	0	0	3
4	15 CS 52G4	Cyberforensics	3	0	0	3
Elective-4						

1	15 CS 52H1	InformationSystems Control andAudit	3	0	0	3
2	15 CS 52H2	Intrusion Detection AndPreventionSystem	3	0	0	3
3	15 CS 52H3	Cryptanalysis	3	0	0	3
4	15 CS 52H4	Cyber Security	3	0	0	3

M.Tech - CYBER SECURITY & DIGITAL FORENSICS

FIRST YEAR(FIRST SEMESTER)						
COURSE CODE	**TITLE OF THE COURSE**	**HOURS**			**CREDITS**
		L	**T**	**P**	
15-CS-5117	Introduction to Cyber Security & ICS	3	0	2	4
15-CS-5118	Digital Forensics	3	0	2	4
15-CS-5119	Advance Network Security & Investigations	3	0	2	4
15-CS-5120	Software Security	3	0	2	4
	Elective-1	3	0	0	3
	Elective-2	3	0	0	3
15-IE-5153	Seminar	0	0	4	2
		TOTAL CREDITS			24

FIRST YEAR(SECOND SEMESTER)					
COURSE CODE	TITLE OF THE COURSE	HOURS			CREDITS
		L	T	P	
15-CS-5217	Cryptography for Cyber Defense	3	0	2	4
15-CS-5218	Malware Analysis & Reverse Engineering	3	0	2	4
15-CS-5219	Cyber Incident Response & Resilience	3	0	2	4
15-CS-5220	Cyber Law, Governance & Compliance	3	0	2	4
	Elective-3	3	0	0	3
	Elective-4	3	0	0	3
15-IE-5254	Term Paper	0	0	4	2
		TOTAL CREDITS			24

SECOND YEAR(III & IV SEMESTERS)		
COURSE CODE	TITLE OF THE COURSE	CREDITS
15-IE-6055	Internship/ Dissertation	36

ELECTIVE COURSES

S.No	**Course code**	**Course Title**	**Periods**			**Credits**
			L	**T**	**P**	
Elective-1						
1	18 CS 51Q1	Mobile Device Threats & Investigation	3	0	0	3

2	18 CS 51Q2	Fundamentals of E-Discovery	3	0	0	3
3	18CS 51Q3	Fuzzy sets and Fuzzy Logic	3	0	0	3
Elective-2						
1	18 CS 51R1	Introduction to Big Data Analytics	3	0	0	3
2	18 CS 51R2	Social Media Forensics	3	0	0	3
3	18 CS 51R3	Critical Information Infrastructure Security	3	0	0	3
Elective-3						
1	18 CS 52S1	Infrastructure Attacks and Defense	3	0	0	3
2	18 CS 52S2	Software Vulnerability Analysis and Resilience	3	0	0	3
3	18 CS 52S3	Parallel & Cloud Computing	3	0	0	3
Elective-4						
1	18 CS 52T1	Applied Cryptography and Steganography	3	0	0	3
2	18 CS 52T2	Software Modeling	3	0	0	3
3	18 CS 52T3	Digital Image Processing	3	0	0	3

M.TECH - CLOUD COMPUTING

First Year (First Semester):

S. No.	Course Code	Course Title	Periods			Credits
			L	T	P	
1	15 CS 5117	Enterprise Devices & Networks	3	1	0	4
2	15 CS 5118	Enterprise Storage Systems	3	1	0	4
3	15 CS 5119	Cloud Computing	3	0	2	4
4	15 CS 5120	Web Application Development	3	0	2	4
5		Elective – 1	3	0	0	3
6		Elective - 2	3	0	0	3
7	15 IE 5149	Seminar	0	0	4	2
		Total	**18**	**4**	**8**	**24**

First Year (Second Semester) :

S. No.	Course Code	Course Title	Periods			Credits
			L	T	P	
1	15 CS 5221	Parallel Algorithms	3	0	2	4
2	15 CS 5222	Cloud Security	3	1	0	4
3	15 CS 5223	Mobile Cloud	3	0	2	4
4	15 CS 5224	Data Centre Virtualization	3	1	0	4
5		Elective – 3	3	0	0	3
6		Elective - 4	3	0	0	3
7	15 IE 5250	Term Paper	0	0	4	2
		Total	**18**	**4**	**8**	**24**

Second Year (First & Second Semester) :

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
1	15 IE 6050	Dissertation	0	0	72	36

ELECTIVE COURSES

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
Elective-1						
1	15 CS 51I1	Data Analysis	3	0	0	3
2	15 CS 51A3	Data Mining	3	0	0	3
3	15 CS 51I2	Distributed Systems	3	0	0	3
4	15 CS 51I3	Big Data Analytics	3	0	0	3
Elective-2						
1	15 CS 51J1	Service Oriented Architecture	3	0	0	3
2	15 CS 51J2	Application Development Frameworks	3	0	0	3
3	15 CS 51J3	Web Semantics	3	0	0	3
4	15 CS 51J4	Network Security	3	0	0	3
Elective-3						
1	15 CS 52K1	Natural Language Processing	3	0	0	3
2	15 CS 52K2	Cloud Application Architectures	3	0	0	3
3	15 CS 52K3	Cloud Strategy Planning and Management	3	0	0	3
4	15 CS 52K4	Scripting for System Administrators	3	0	0	3
Elective-4						
1	15 CS 52L1	Object Oriented Software Engineering	3	0	0	3
2	15 CS 52L2	Map Reduce Design Patterns	3	0	0	3
3	15 CS 52L3	Open Source Cloud Computing and Testing	3	0	0	3
4	15 CS 52L4	Advances in Computing	3	0	0	3

M.TECH - COMMUNICATION & RADAR SYSTEMS

First Year (First Semester):

S. No.	Course Code	Course Title	Periods			Credits
			L	T	P	
1	15 EC 5101	Modern Digital communication	3	1	2	5
2	15 EC 5102	Microwave Antennas	3	1	2	5
3	15 EC 5103	EMI / EMC Techniques	3	1	0	4
4	15 EC 5104	Radar Engineering	3	1	0	4
5		Elective – 1	3	0	0	3
6		Elective - 2	3	0	0	3
7	15 IE 5149	Seminar	0	0	4	2
		Total	**18**	**4**	**8**	**26**

First Year (Second Semester) :

S. No.	Course Code	Course Title	Periods			Credit s
			L	T	P	
1	15 EC 5205	Microwave and Millimetric wave Circuits	3	1	2	5
2	15 EC 5206	Antenna Measurements	3	1	2	5
3	15 EC 5207	Wireless Cellular Communication	3	1	0	4
4	15 EC 5208	Modern Radar Systems	3	1	0	4
5		Elective – 3	3	0	0	3
6		Elective - 4	3	0	0	3
7	15 IE 5250	Term Paper	0	0	4	2
		Total	**18**	**4**	**8**	**26**

Second Year (First & Second Semester) :

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
1	15 IE 6050	Dissertation	0	0	72	36

ELECTIVE COURSES

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
Elective-1						
1	15 EC 51A1	Fundamentals of Electronic Warfare	3	0	0	3
2	15 EC 51A2	Microwave Semi Conductor Devices	3	0	0	3
3	15 EC 51A3	Smart Antennas	3	0	0	3
Elective-2						
1	15 EC 51B1	Phased Array Systems	3	0	0	3
2	15 EC 51B2	GPS &Global Navigation Satellite System	3	0	0	3
3	15 EC 51B3	Optical Communications	3	0	0	3

Elective-3						
1	15 EC 52C1	Estimation & Detection Theory	3	0	0	3
2	15 EC 52C2	Radar Signal Processing	3	0	0	3
3	15 EC 52C3	High Performance Communication Networking	3	0	0	3
Elective-4						
1	15 EC 52D1	RF & Microwave System Design	3	0	0	3
2	15 EC 52D2	VLSI Design	3	0	0	3
3	15 EC 52D3	Remote Sensing & Sensors	3	0	0	3

M.TECH - SPACE TECHNOLOGY & ATMOSPHERIC SCIENCE

First Year (First Semester):

S. No.	Course Code	Course Title	Periods			Credits
			L	T	P	
1	15 EC 5117	Microwave and Satellite Communications	3	1	0	4
2	15 EC 5118	Foundations of Atmospheric Science & Space Technology	3	1	0	4
3	15 EC 5119	Global Navigation Satellite System	3	1	2	5
4	15 EC 5120	Physics and Dynamics of Lower Atmosphere	3	1	2	5
5		Elective – 1	3	0	0	3
6		Elective - 2	3	0	0	3
7	15 IE 5149	Seminar	0	0	4	2
		Total	**18**	**4**	**8**	**26**

First Year (Second Semester) :

S. No.	Course Code	Course Title	Periods			Credits
			L	T	P	
1	15 EC 5221	Satellite Meteorology	3	1	2	5
2	15 EC 5222	Atmospheric & Space Instrumentation	3	1	0	4
3	15 EC 5223	Advanced Satellite Navigation Systems	3	1	0	4
4	15 EC 5224	Weather and Climate Applications	3	1	0	4
5		Elective – 3	3	0	0	3
6		Elective - 4	3	0	0	3
7	15 IE 5250	Term Paper	0	0	4	2
		Total	**18**	**4**	**8**	**25**

Second Year (First & Second Semester) :

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
1	15 IE 6050	Dissertation	0	0	72	36

ELECTIVE COURSES

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
Elective-1						
1	15 EC 51I1	Atmospheric and Weather Radars	3	0	0	3
2	15 EC 51I2	Modern Digital Communications	3	0	0	3
Elective-2						
1	15 EC 51J1	GIS Analysis & Modeling	3	0	0	3
2	15 EC 51J2	Global Weather and Climate	3	0	0	3
Elective-3						
1	15 EC 52K1	Aeronomy	3	0	0	3
2	15 EC 52K2	Detection and Estimation Theory	3	0	0	3
Elective-4						
1	15 EC 52L1	Weather Hazards & Risk Assessment	3	0	0	3
2	15 EC 52L2	Climate Change	3	0	0	3

M.TECH –VLSI

First Year (First Semester):

S. No.	Course Code	Course Title	Periods			Credits
			L	T	P	
1	15 EC 5128	MOS Circuit Design	3	1	2	5
2	15 EC 5129	Algorithm for VLSI Design Automation	3	1	0	4
3	15 EC 5130	HDL & PLD Architectures	3	1	2	5
4	15 EC 5131	IC Fabrication Technology	3	1	0	4
5		Elective – 1	3	0	0	3
6		Elective - 2	3	0	0	3
7	15 IE 5149	Seminar	0	0	4	2
		Total	**18**	**4**	**8**	**24**

First Year (Second Semester) :

S. No.	Course Code	Course Title	Periods			Credits
			L	T	P	
1	15 EC 5232	Advanced Analog IC Design	3	1	2	5
2	15 EC 5233	Low Power VLSI Circuits	3	0	2	4
3	15 EC 5234	VLSI System Design	3	1	0	4
4	15 EC 5235	Testing of VLSI Circuits	3	1	0	4
5		Elective – 3	3	0	0	3
6		Elective - 4	3	0	0	3
7	15 IE 5250	Term Paper	0	0	4	2
		Total	**18**	**4**	**8**	**24**

Second Year (First & Second Semester) :

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
1	15 IE 6050	Dissertation	0	0	72	36

ELECTIVE COURSES

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
Elective-1						
1	15 EC 51Q1	Embedded System Design	3	0	0	3
2	15 EC 51Q2	VLSI Signal Processing	3	0	0	3
3	15 EC 51Q3	CMOS Mixed Signal Circuits	3	0	0	3
4	15 EC 51Q4	Nano Electronics	3	0	0	3
5	15 EC 51Q5	CAD Tools for VLSI	3	0	0	3
Elective-2						
1	15 EC 51R1	Image and Video Processing	3	0	0	3
2	15 EC 51R2	Bi-CMOS Technology & Applications	3	0	0	3

3	15 EC 51R3	Semiconductor Device Modeling	3	0	0	3
4	15 EC 51R4	Memory Design and Testing	3	0	0	3
5	15 EC 51R5	Reconfigurable Computing	3	0	0	3
Elective-3						
1	15 EC 52S1	System on Chip Design	3	0	0	3
2	15 EC 52S2	Process and Device Characterization Measurements	3	0	0	3
3	15 EC 52S3	Advanced VLSI Design	3	0	0	3
4	15 EC 52S4	MEMS System Design	3	0	0	3
5	15 EC 52S5	VLSI for Wireless Communication	3	0	0	3
Elective-4						
1	15 EC 52T1	Optimization Techniques and Applications in VLSI Design	3	0	0	3
2	15 EC 52O1	CMOS RF Circuit Design	3	0	0	3
3	15 EC 52T2	Advanced Digital IC Design	3	0	0	3
4	15 EC 52T3	Nano Sensors and its applications	3	0	0	3
5	15 EC 52T4	ASIC Design Flow	3	0	0	3

M.TECH - EMBEDDED SYSTEMS

First Year (First Semester):

S. No.	Course Code	Course Title	Periods			Credits
			L	T	P	
1	15 EM 5101	Microcontrollers for Embedded System Design.	3	0	2	4
2	15 EM 5102	Real Time Concepts for Embedded Systems	3	2	0	4
3	15 EM 5103	VLSI Technology & Design	3	0	2	4
4	15 EM 5104	Wireless Communications & Networks	3	2	0	4
5		Elective – 1	3	0	0	3
6		Elective - 2	3	0	0	3
7	15 IE 5149	Seminar	0	0	4	2
Total			18	4	8	24

First Year (Second Semester) :

S. No.	Course Code	Course Title	Periods			Credits
			L	T	P	
1	15 EM 5205	RSIC processor Architecture and Programming	3	0	2	4
2	15 EM 5206	Digital Signal Processors and Architectures	3	2	0	4
3	15 EM 5207	Advanced Embedded Systems Design	3	2	0	4
4	15 EM 5208	Linux System Concepts	3	0	2	4
5		Elective – 3	3	0	0	3
6		Elective - 4	3	0	0	3
7	15 IE 5250	Term Paper	0	0	4	2
Total			18	4	8	24

Second Year (First & Second Semester) :

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
1	15 IE 6050	Dissertation	0	0	72	36

ELECTIVE COURSES

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
Elective-1						
1	15 EM 51A1	CPLD & FPGA Architectures and Applications	3	0	0	3
2	15 EM 51A2	Robotics	3	0	0	3
3	15 EM 51A3	System Modeling and Simulation	3	0	0	3
Elective-2						
1	15 EM 51B1	Embedded Real Time Operating Systems	3	0	0	3
2	15 EM 51B2	Object Oriented Analysis and Design	3	0	0	3
3	15 EC 51R1	Image and Video Processing	3	0	0	3
Elective-3						
1	15 EM 52C1	Networking of Embedded Systems	3	0	0	3
2	15 EM 52C2	Ad-hoc & Wireless Sensor Networks	3	0	0	3
3	15 EM 52C3	Cryptography and Network Security	3	0	0	3
Elective-4						
1	15 EM 52D1	Embedded Linux and Basics of Device drivers	3	0	0	3
2	15 EM 52D2	SOC Design and Verification	3	0	0	3
3	15 EM 52D3	Advanced Computer Networks	3	0	0	3

M.TECH - WIRELESS COMMUNICATION & SENSOR NETWORKS

First Year (First Semester):

S. No.	Course Code	Course Title	Periods			Credits
			L	T	P	
1	15 EM 5109	Computational Methods and Error Analysis	**3**	**2**	**0**	4
2	15 EM 5110	Wireless Communication	**3**	**0**	**2**	4
3	15 EM 5111	Sensors and Sensing Principles	**3**	**2**	**0**	4
4	15 EM 5112	Data Acquisition and Hardware Networks	**3**	**0**	**2**	4
5		Elective – 1	3	0	0	3
6		Elective - 2	3	0	0	3
7	15 IE 5149	Seminar	0	0	4	2
		Total	**18**	**4**	**8**	**24**

First Year (Second Semester) :

S. No.	Course Code	Course Title	Periods			Credits
			L	T	P	
1	15 EM 5213	Micro Electro Mechanical Systems(MEMS)	**3**	**2**	**0**	4
2	15 EM 5214	Communications Protocols and Standards	**3**	**0**	**2**	4
3	15 EM 5215	Wireless Sensor Networks	**3**	**0**	**2**	4
4	15 EM 5216	Design and Analysis of Algorithms	**3**	**2**	**0**	4
5		Elective – 3	3	0	0	3
6		Elective - 4	3	0	0	3
7	15 IE 5250	Term Paper	0	0	4	2
		Total	**18**	**4**	**8**	**24**

Second Year (First & Second Semester) :

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
1	15 IE 6050	Dissertation	0	0	72	36

ELECTIVE COURSES

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
Elective-1						
1	15 EM 51E1	Ad hoc and Vehicular Networks	3	0	0	3
2	15 EM 51E2	Cryptography Wireless Security	3	0	0	3
3	15 EM 51E3	Advanced Data Communications	3	0	0	3
4	15 EM 51E4	Methods of Probability and Stochastic Process	3	0	0	3

Elective-2						
1	15 EM 51F1	Database Design and Management	3	0	0	3
2	15 EM 51F2	Remote Sensing	3	0	0	3
3	15 EM 51F3	RF System Design for Wireless Communications	3	0	0	3
4	15 EM 51F4	Optical Networks	3	0	0	3
Elective-3						
1	15 EM 52G1	Advanced Digital Communications	3	0	0	3
2	15 EM 52G2	Smart Grid Communications and Networking	3	0	0	3
3	15 EM 52G3	Advanced Wireless Networks	3	0	0	3
4	15 EM 52G4	CDMA and OFDM for Wireless Communications	3	0	0	3
Elective-4						
1	15 EM 52H1	Advanced Techniques for Wireless Reception	3	0	0	3
2	15 EM 52H2	Fuzzy logic and Neural Networks	3	0	0	3
3	15 EM 52H3	Reliability Engineering Applications	3	0	0	3
4	15 EM 52H4	Advanced Microcontroller and its Applications	3	0	0	3

M.TECH - POWER SYSTEMS

First Year (First Semester):

S. No.	**Course Code**	**Course Title**	**Periods**			**Contact Hours**	**Credits**
			L	**T**	**P**		
1	15 EE 5109	Power System Dynamics & stability	3	0	2	6	4
2	15 EE 5110	Advanced Power System Analysis	3	2	2	6	5
3	15 EE 5105	Deregulated operation of power systems	3	0	2	6	4
4	15 EE 5104	Modern Control theory	3	2	0	6	4
5		Elective – 1	3	0	0	3	3
6		Elective - 2	3	0	0	3	3
7	15 IE 5149	Seminar	0	0	4	4	2
			18	**4**	**10**	**34**	**25**

First Year (Second Semester) :

S. No.	**Course Code**	**Course Title**	**Periods**			**Contact Hours**	**Credits**
			L	**T**	**P**		
1	15 EE 5211	Real Time Control of Power System	3	2	2	6	5
2	15 EE 52H1	AI Techniques in Power Systems	3	2	0	6	4

3	15 EE 52D1	Smart Grids	3	2	0	6	4
4	15 EE 5213	Power Systems Digital Protection	3	2	0	6	4
5		Elective – 3	3	0	0	3	3
6		Elective - 4	3	0	0	3	3
7	15 IE 5250	Term Paper	0	0	4	4	2
Total			**18**	**8**	**6**	**30**	**25**

Second Year (First & Second Semester) :

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
1	15 IE 6050	Dissertation	0	0	72	36

ELECTIVE COURSES

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
Elective-1						
1	15 EE 51E1	Reactive Power Compensation & Management	3	0	0	3
2	15 EE 51E2	Distribution System Planning & Automation	3	0	0	3
3	15 EE 51E3	Power System Reliability	3	0	0	3
Elective-2						
1	15 EE 51F1	Power System Restructuring, Deregulation & Power Markets	3	0	0	3
2	15 EE 51B2	Non Conventional Energy Resources	3	0	0	3
3	15 EE 51B1	Digital SignalProcessor and applications	3	0	0	3
4	15 EE 51F2	Alternative sources of electrical energy	3	0	0	3
5	15 EE 5103	Optimization Techniques	3	0	0	3
Elective-3						
1	15 EE 52G1	Energy Conservation & Audit	3	0	0	3
2	15 EE 52C1	FACTS	3	0	0	3
3	15 EE 52G1	Adaptive control systems	3	0	0	3
Elective-4						
1	15 EE 52D1	Smart Grids	3	0	0	3
2	15 EE 52D2	State Estimation & Adaptive Control	3	0	0	3
3	15 EE 52C2	Power Quality	3	0	0	3

4	15 EE 5212	EHVAC & HVDC Transmission	3	0	0	3
5	15EE52H2	Embedded Systems	3	0	0	3

M.TECH - POWER ELECTRONICS AND DRIVES

First Year (First Semester):

S. No.	Course Code	Course Title	Periods			Contact Hours	Credits
			L	T	P		
1	15 EE 5117	Machine modeling Analysis	3	2	0	6	4
2	15 EE 5118	Analysis of power converters	3	1	2	6	5
3	15 EE 5119	Power electronics control drives	3	2	0	4	4
4	15 EE 5104	Modern Control theory	3	2	0	4	4
5		Elective – 1	3	0	0	3	3
6		Elective - 2	3	0	0	3	3
7	15 IE 5149	Seminar	0	0	4	4	2
Total			**18**	**7**	**8**	**30**	**25**

First Year (Second Semester) :

S. No.	Course Code	Course Title	Periods			Contact Hours	Credits
			L	T	P		
1	15 EE 5205	Advanced Power Converters	3	1	2	7	5
2	15 EE 5220	Advanced electrical drives	3	2	0	5	4
3	15 EE 52D1	Smart Grids	3	2	0	5	4
4	15 EE 5221	FPGA controllers and applications	3	2	0	5	4
5		Elective – 3	3	0	0	3	3
6		Elective - 4	3	0	0	3	3
7	15 IE 5250	Term Paper	0	0	4	4	2
Total			**18**	**7**	**6**	**32**	**25**

Second Year (First & Second Semester) :

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
1	15 IE 6050	Dissertation	0	0	72	36

ELECTIVE COURSES

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
Elective-1						
1	15 EE 51A1	Instrumentation & Control	3	0	0	3
2	15 EE 51A2	Special Machines	3	0	0	3
3	15 EE 51A3	Electric and Hybrid Vehicles	3	0	0	3
4	15 EE 51A4	Microcontrollers and applications	3	0	0	3
5	15 EE 51A5	Modeling and simulation of power electronics converters	3	0	0	3
6	15 EE 51A6	Sensors and Transducers	3	0	0	3
Elective-2						
1	15 EE 51B1	Digital SignalProcessor and applications	3	0	0	3
2	15 EE 51B2	Non Conventional Energy Resources	3	0	0	3
3	15 EE 51B3	AI Techniques in Power Electronics & Drives	3	0	0	3
3	15 EE 51B4	Soft computing techniques	3	0	0	3
Elective-3						
1	15 EE 52C1	FACTS	3	0	0	3
2	15 EE 52C2	Power Quality	3	0	0	3
3	15 EE 52C3	Embedded Control of Electric Drives	3	0	0	3
4	15 EE 52C4	Electric vehicles	3	0	0	3
Elective-4						
1	15 EE 52D2	State Estimation & Adaptive Control	3	0	0	3
2	15 EE 52D3	Advance PWM Techniques	3	0	0	3
3	15 EE 52D4	Power electronics for renewable energy systems	3	0	0	3

M.TECH - MECHATRONICS

First Year (First Semester):

S. No.	Course Code	Course Title	Periods			Contact Hours	Credits
			L	T	P		
1	15 ME 5101	Fundamentals of Mechatronics	3	2	0	4	4
2	15 ME 5102	Advanced Engineering Mathematics	3	2	0	4	4
3	15 ME 5103	Sensors and Actuators	3	2	0	4	4
4	15 ME 5104	Modeling and Simulation of Mechatronic Systems	3	0	2	4	4
5		Elective – 1	3	0	0	3	3
6		Elective - 2	3	0	0	3	3
7	15IE5149	Seminar	0	0	4	4	2
		Total	**18**	**4**	**8**	**30**	**24**

First Year (Second Semester) :

S. No.	Course Code	Course Title	Periods			Contact Hours	Credits
			L	T	P		
1	15 EM 5205	Robotics: Advanced Concepts and Analysis	3	2	0	4	4
2	15 EM 5206	Control of Mechatronic Systems	3	2	0	4	4
3	15 EM 5207	Mechatronics Product Design	3	2	0	4	4
4	15 EM 5208	Precision Engineering	3	2	0	4	4
5		Elective – 3	3	0	0	3	3
6		Elective - 4	3	0	0	3	3
7	15 IE 5250	Term Paper	0	0	4	4	2
		Total	**18**	**4**	**8**	**30**	**24**

Second Year (First & Second Semester) :

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
1	15 IE 6050	Dissertation	0	0	72	36

ELECTIVE COURSES

S.No	Course code	Course Title	Periods			Credits
			L	T	P	
Elective-1						
1	15 ME 51A1	Signal Processing in Mechatronic Systems	3	0	0	3
2	15 ME 51A2	MEMS and NEMS	3	0	0	3

3	15 ME 51A3	Vehicle Dynamics and Multi-body Systems	3	0	0	3
Elective-2						
1	15 ME 51B1	Emerging Smart Materials for Mechatronics Applications	3	0	0	3
2	15 ME 51B2	Intelligent Visual Surveillance	3	0	0	3
3	15 ME 51B3	Microprocessors and Embedded Systems	3	0	0	3
Elective-3						
1	15 ME 52C1	Computational Fluid Dynamics	3	0	0	3
2	15 ME 52C2	Nonlinear Optimization	3	0	0	3
Elective-4						
1	15 ME 52D1	Industrial Automation	3	0	0	3
2	15 ME 52D2	Fuzzy Sets and Artificial Intelligence	3	0	0	3