

KDK College of Engineering, Nagpur

(Estd.in 1984, NBA Accredited,Grade-A)

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HAND BOOK

Name (Student/ Staff): -----

Regd. Number/ Designation : -----

Department/ Branch : -----

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1. Vision & Mission of the College

Vision

"Service to the society through Quality Technical Education"

Mission

- Academic Excellence in Engineering and Technology Through Complete dedication to all round Growth of Students.
- Enable the Students to Develop Outstanding Professional with Technical Competence and Management Skills.
- Fulfill the Expectance of the Society and Industries with Ethical Standards for developing Sustainable Solutions

2. About KDK College of Engineering

The Karmavir Dadasaheb Kannamwar College of Engineering, situated in the heart of India in Nagpur city, established in 1984 by Backward Class Youth Relief Committee (BCYRC) is one of the leading engineering colleges in Maharashtra State. Government of Maharashtra has conferred 'A' Grade on the basis of excellence & adequate infrastructure as well as academic achievements of students and faculty. It is approved by AICTE New Delhi and The Institute of Engineers (India). The college successfully continues to attract attention of scholars from all over the subcontinent. The college runs under graduate and postgraduate courses i.e two courses with six branches of Engineering and three PG programs in Mechanical Engineering, Civil Engineering and Master of Business Administration . In addition to these, college has approved research centre for Ph.D in Civil Engineering, Mechanical Engineering with 15 seats each.

3. Messages

Message of Chairperson



Hon'ble Smt. Sumanmala Mulak is a Chairperson of Backward Class Youth Relief Committee (BCYRC). Along with Late Shri Bhausahab Mulak, She was constantly involved in the betterment of institutions run by BCYRC.

This is an age of modern science and technology and we are in the 21st century. India is growing economically & technologically and will join the list of “Developed Nations: by year 2020. The growth is not possible without sound support of technical human resource. We at KDKCE aim at overall development of the personality of an individual by providing best education, technical know-how, personality traits and leadership qualities to grow as a manager and technocrat. The mission of the sanstha is to generate effective synchronization amongst academicians, professionals, technocrats and students so as to achieve excellence in technical education with a sense of commitment to meet the national aspirations.

Message of the secretary



A guiding force, Shri Rajendra Mulak, the Secretary and Ex- Minister of State, Government of Maharashtra, is an enterprising, dynamic and innovative personality and is the catalytic force behind the progress of the organization. Ex- Minister of State Government of Maharashtra. I welcome you all to the prestigious and glorious technical institution that has been carving students in to world renowned engineers with rich ethical values. The college is enriched with well established library that caters to the needs of modern student. The institution is a hub of Student clubs that helps them to gratify their creative and innovative minds and weaving social responsibility with leadership qualities among students. I wish you all the success in your endeavours to become a global engineer.

Message of the Principal : Dr. D.P. Singh



K.D.K. College of Engineering is dedicated to the cause of top-quality technical education with the motto of ‘Service to the Society through Quality Technical Education’. At this institute, we devote ourselves to empower our budding engineers to achieve quality education imbued with professional skills and ethical values and to blossom them into capable individuals having high technical competence coupled with healthy mind and strong physique.

We take special efforts like innovative teaching practices to bridge the gap between expectations of industry (from new recruits) and academic inputs provided, by arranging add-on technical and soft skill development programs. To align with our innovative teaching practices, we have excellent faculty and state of the art infrastructural facilities and laboratories. We aim to continue imparting excellent technical education at affordable price in future.

I, take this opportunity to thank all the stakeholders for showing interest and continuous support in achieving pioneering position. I extend my best wishes to all students in their chosen career path.

Message of the Vice Principal : Dr. A.M.Badar



KDKCE is established with the aim of providing quality higher education. In our pursuit of excellence, we persistently seek and adopt innovative methods to improve the quality of education as well as life on campus. The benchmark we set for ourselves in the field of teaching and research propel in our journey towards excellence.

A dedicated, experienced and learned teachers nurture the talents of students. The campus exudes a cosmopolitan ambience with students drawn from all parts of India. Life at KDKCE is replete with numerous international conferences, symposia, workshops and cultural events, as we believe that such co-curricular activities are essential for moulding the students into holistic personalities. We look forward in welcoming you to this academic community.

4. ACADEMIC RULES & REGULATIONS FOR B. E/ M.TECH/MBA PROGRAM

4.1 ADMISSIONS TO B.E

Admissions into the first and direct second year of B.E Program will be as per the directives from Directorate of Technical Education, Maharashtra State Mumbai.

4.2 DURATION OF THE PROGRAM AND MEDIUM OF INSTRUCTION:

The duration of the B.E Program is for four academic years consisting of two semesters in each academic year. The medium of instruction and examinations is English.

4.3 PROGRAMS OF STUDY IN B.E:

The Four year B.E Program is offered in the following branches of study:

Particulars	SN	Course	Intake Approved (Session 2017-18)
UG Program (B.E.)	1	Civil Engineering	120
	2	Mechanical Engineering 1st Shift	120
	3	Electrical Engineering	120
	4	Computer Technology	90
	5	Electronics Engineering	60
	6	Information Technology	60
	7	Mechanical Engineering 2nd Shift	60

4.4 PROGRAMS OF STUDY IN M.TECH/MBA:

The Two year M.Tech/MBA Program is offered in the following branches of study:

Particulars	SN	Course	Intake Approved (Session 2017-18)
PG Program (M.Tech./MBA)	1	Structural Engineering	18
	2	Mechanical Engineering Design	18
	3	M.B.A	60

4.5 PROGRAMS OF STUDY IN PH.D:

The Ph.D Program is offered in the following branches of study:

Particulars	SN	Course	Intake Approved (Session 2017-18)
(Ph.D Program)	11	Civil Engineering Ph.D	15
	12	Mechanical Engineering Ph.D	15

4.6 ACADEMIC CALENDAR 2017-18

I SEMESTER

S.N.	Activity	Proposed dates
1	Commencement of classes	01/08/2017
2	Induction program	01/08/2017
3	First unit test	21/08/17 TO 28/08/17
4	First sessional exam	14/09/17 TO 16/09/2017
5	Fresher's day	23/09/2017
6	Parent teacher meeting	07/10/2017
7	Diwali vacation	16/10/17 to 21/10/17
8	Second sessional exam	23/10//17 to 25/10/17
9	Internal practical exam	06/11/17 TO 18/11/17
10	Last teaching day	18/11/17
11	Pre university test	20/11/17 TO 25/11/17
12	University theory exam	02/12/17 TO 13/12/17
13	University practical exam	15/12/17 TO 22/12/17

II SEMESTER

S.N.	Activity	Proposed dates
1	Commencement of classes	01/01/2018
2	Navomesh	30 TH & 31 ST JAN 2018
3	Class unit test -1	05/02/18 TO 11/02/18
4	First sessional exam	23/02/18 to 25/02/18
5	Parent teacher meeting	10/03/18
6	Second sessional exam	29/03/18 TO 31/03/18
7	Last teaching day	07/04/2018
8	Internal practical exam	02/04/18 to 07/04/18
9	Pre university test	09/04/18 TO 15/04/18
10	University practical exam	As per university schedule
11	University theory exam	As per university schedule

III , V & VII SEMESTER

S.N.	Activity	Proposed dates
1	Commencement of Classes B.E. III ,V & VII SEM	15 th June 2017
2	International Yoga day (Dr.G.H.Agrawal)	21 st June 2016
3	Commencement of Classes B.E. I SEM	01 st August 2017
4	Induction Program to First Year	First Week of August 2017
5	Formation of Students association	First Week of July 2017
6	Students Seminar	July to September 2017
7	First Sessional Examination on Two Units 1&2	26 th to 29 th July 2017
8	One Day Local Educational Tour including First Year	Preferably in August 2017
9	Independence day (Electrical Department)	15 th August 2017
10	Second Sessional Examination on Two Units 3&4	01 st , 4 th and 6 th September 2017
11	Internal Practical's Examination, Seminar etc.	11 th to 13 th Sept. 2016
12	Pre University Examination PUT	Second Week of Oct.2017
13	RTMNU Practical Examination	Likely to be from 15 th to 29 Sept 2017 depends on RTMNU schedule
14	University Theory Examination Proposed	Even Semester 03 Oct. 17 & Odd Semester 24 st Oct. 17.
15	Winter vacation	16 th Oct. 2017 to 14 Nov. 2017

IV & VI & VIII SEMESTER

S.N.	Activity	Proposed dates
1	Commencement of Classes B.E. II ,IV & VI & VIII SEM	15 th Nov. 2017
2	Foreign tour (I/C Dr.C.C.Handa)	Nov./ Dec. 2017
3	Long Educational tours	Nov./ Dec. 2017
	First Sessional Examination on Two Units 1&2	26 th to 28 th Dec. 2017
4	Republic day (Electrical Department)	26 th January 2018
5	Alumni meet main attraction 2008 batch (I/C Mr.A.M.Halmare)	27th January 2018 Fourth Saturday
6	Navonmesh 2018 Electronics Dept. Dr. P.D.Khandait Coordinator	Last Week of January 2018
7	One Day Local Educational Tour	In the month of January 2018
8	Second Sessional Examination on Two Units 3&4	5 th to 7 th February 2018
9	SPARK 2018 (I/C Dr.C.C.Handa) Mechanical Dept.	Second Week of Feb. 2018
10	Deptt. Student association One day Activity with prior permission only on Saturday and Sunday.	Preferably in Third & Last Week of Dec.2017/ First and Second Week of Jan.2018
11	Students Seminar	January to February 2018
12	Pre University Examination PUT on Complete Syllabus	Second / Third week of Feb. 2018
13	Internal Project Submission for Final Year With report .	25 th January 2018
14	Internal Practical Examination .	First Week of February 2018
15	RTMNU Practical Examination	Likely to be from 01 st to 20 th February 2018 depends on RTMNU schedule
16	University Theory Examination Proposed	Odd Semester 20 Feb 18 & Even Semester 13 March 18
17	Summer Vacation	01 st May to 14 th June 2018.
18	Commencement of next academic session 2018-19.	15-06-2018
19	AVISHKAR – 2018 For Junior College	Finalize the dates at the earliest

First Year Dept.

20 NIRMAN- 2018 For Polytechnic EN, Finalize the dates at the earliest
CT and IT branch.

4.7 B.E PROGRAM STRUCTURE

A student after securing admission shall pursue the under graduate program for a minimum period of four academic years (8 semesters). Each academic year is divided into two semesters. Branch wise credits are tabulated as follows:

Branch	Sem-I	Sem-II	Sem-III	Sem-IV	Sem-V	Sem-VI	Sem-VII	Sem-VIII	Total Credit
Civil	28	27	24	25	25	27	25	24	205
Mech.	28	27	28	25	26	30	26	29	219
Electrical	28	27	27	27	29	29	30	26	223
C.T	28	27	27	27	28	29	26	28	220
I.T	28	27	27	28	29	27	29	26	221
ETRX	28	27	27	28	27	27	28	29	221

5. CRITERIA FOR ATTENDANCE

1. Each student must satisfy the criteria of least attendance of 75 % in every semester to appear for R. T. M. university examinations. Any deficit in attendance will bring about detention of the student, and the student will be only responsible of this.
2. The students' attendance is monitored on hourly basis through ERP software.
3. Attendance is frequently checked and every week subject-wise attendance of students will be verified and displayed on the notice board.
4. Students with less attendance will have to make their attendance by attending extra classes.
5. The students taking part in Educational/Cultural/Sports events in University/State/National levels between the semester will be allowed to take leave.
6. Before proceeding on leave, prior consent of the Class-In charge, Head of Department and Principal is compulsory.

7. Any unofficial leave will be accountable for disciplinary action.

Academic programs of the K. D. K. C. E., are governed by the All India Council for Technical Education (AICTE), Directorate of Technical Education, Govt. of Maharashtra (DTE), R T M Nagpur University (RTMNU). The academic polices are appropriate to all students who are willing to take the admission to the institute.

6. ADMISSION TO FULL TIME UG PROGRAM IN ENGINEERING

1. Admissions to the first year of the all engineering programs will be made through the Maharashtra State Common Entrance Test (MHT-CET) conducted by the Government of Maharashtra and/or based on Joint Entrance Examination (JEE) coordinated by Central Board of Secondary Education.
2. The admission limit of each Program, criteria for reservation, qualification prerequisites will be in accordance with the AICTE/Government/DTE directives.
3. The Institution should likewise admit to first year of the engineering program, a predetermined number of students at Institute Level according to the quota decided by Government.
4. The Institution should likewise admit to first year of the engineering program, Non Resident Indian (NRI) students according to the quota decided by the DTE and Government.
5. The chosen student will be admitted to the UG program after he/she satisfies all admission requirements as demonstrated in the offer letter issued by the Proficient Authority.
6. If after admission, it is discovered that a student has not satisfied any one of the prerequisites stipulated in the offer letter of admission, the DTE may reject the admission of the student.

7. ADMISSION TO DIRECT SECOND YEAR OF UG DEGREE PROGRAM IN ENGINEERING

Admission to all courses in Direct Second year for candidates having Diploma in Engineering in proportionate branches will be as per the Directions of DTE. The admission will be through centralized admission process of DTE, Government of Maharashtra as per the number of vacant seats available.

8. ADMISSIONS TO PG ENGINEERING PROGRAMS

The admission to PG programs will be offered to

- a) The student who has a Bachelors Degree in Engineering/Technology from technical institution recognized by DTE, Government of Maharashtra.
- b) The GATE score of student must be valid.
- c) If there is an occurrence of non accessibility of adequate number of GATE qualified students, the empty seats will be offered to students without GATE score based on their execution in selection test PG-CET directed by the Govt. of Maharashtra according to merit.

9. RULES FOR PROMOTION TO HIGHER SEMESTER

The A.T.K.T. Rules for B.E. according to RTMNU rules are as follows:

Admission to Semester	Candidate should have passed in all subject heads of following examination of the university	Status of the term work	Candidate should have passed in 2/3rd of total subject heads of the following examination taken together
I	As per eligibility	--	--
II	---	I Sem term work should have been completed	---
III	---	---	I and II Semester
IV	--	III Sem term work should have been completed	I and II Semester
V	I and II Semester	---	III and IV Semester
VI	I and II Semester	V Sem term work should have been completed	III and IV Semester
VII	III and IV Semester	---	V and VI Semester
VIII	III and IV Semester	VII Sem term work should have been completed	V and VI Semester

Note:

- i) For calculation of passing heads, any decimal fraction should be rounded off to lower digit.
- ii) The passing heads shall include all the credit and audit subject heads.

10. GRADING RULES

- i) In B.E. minimum passing marks for the theory subject shall be 40% of total marks & 50% for practical of total marks in respective subject head.

- ii) The marks will be allotted in all examinations which will include college assessment marks and the total marks for each Theory / Practical shall be converted into Grades.
- iii) SGPA shall be calculated based on Grade Points corresponding to percentage of marks as given in table below and the Credits allotted to respective Theory / Practical shown in the scheme for respective semester.
- iv) SGPA shall be computed for every semester and CGPA shall be computed only in VIII semester.
- v) The CGPA of VIII semester shall be calculated based on SGPA of VII and SGPA of VIII semester taken together as per following computation :-

$$\text{SGPA} = \frac{C_1 \times G_1 + C_2 \times G_2 + \dots + C_n \times G_n}{C_1 + C_2 + \dots + C_n}$$

Where: C = Credit of individual Theory / Practical

G = Corresponding Grade Point obtained in the respective Theory /Practical.

$$\text{CGPA} = \frac{(\text{SGPA})_{\text{VII}} \times (\text{Cr})_{\text{VII}} + (\text{SGPA})_{\text{VIII}} \times (\text{Cr})_{\text{VIII}}}{(\text{Cr})_{\text{VII}} + (\text{Cr})_{\text{VIII}}}$$

Where: (SGPA)_{VII} = SGPA of VII Semester

(Cr)_{VII} = Total Credits for VII Semester

(SGPA)_{VIII} = SGPA of VIII Semester

(Cr)_{VIII} = Total Credits for VIII Semester

SGPA = Semester Grade Point Average

CGPA = Cumulative Grade Point Average

$$\text{Equivalent \%} = (\text{CGPA} - 0.75) \times 10$$

THEORY			PRACTICAL		
GRADE	% of MARKS	GRADE POINTS	GRADE	% of MARKS	GRADE POINTS
AA	80 ≤ Marks ≤ 100	10	AA	85 ≤ Marks ≤ 100	10
AB	70 ≤ Marks < 80	9	AB	80 ≤ Marks < 85	9
BB	60 ≤ Marks < 70	8	BB	75 ≤ Marks < 80	8
BC	55 ≤ Marks < 60	7	BC	70 ≤ Marks < 75	7
CC	50 ≤ Marks < 55	6	CC	65 ≤ Marks < 70	6
CD	45 ≤ Marks < 50	5	CD	60 ≤ Marks < 65	5
DD	40 ≤ Marks < 45	4	DD	50 ≤ Marks < 60	4
FF	00 ≤ Marks < 40	0	FF	00 ≤ Marks < 50	0
ZZ	Absent in Examination	--	ZZ	Absent in Examination	--

11. ENGINEERING PROGRAM COURSE OUTCOMES

BASIC SCIENCE AND HUMANITIES

BESI-1T Applied Mathematics - 1

CO101.1	Student learned the skill of finding nth derivative of standard functions and product functions. They can find series expansion of functions and apply the knowledge of derivation to find limiting values of indeterminate forms and curvature
CO101.2	Student achieve the skill of several partial differential of first and higher order for functions of several variables and they apply the skill for finding series expansion of functions of two variables, maxima and minima of function of two variables
CO101.3	Students can find inverse of matrix by adjoint and partitioning method they can apply this skill to solve system of linear equation. They can find rank of a matrix consistency of system of equations
CO101.4	Student know how to solve first order first degree and higher degree equations, linear reducible to linear and exact differential equations. They can apply this knowledge to solve engineering problems in simple electrical circuit.
CO101.5	Student gain the knowledge to solve higher order differential equations with constant coefficients, simultaneous differential equations, special type of equations and apply their knowledge to differential equations in various engineering problems such as oscillation of a spring, deflection of beam etc
CO101.6	Students learn cartesian and polar forms of complex numbers, geometrical representation of fundamental operations on complex numbers, De Moivre theorem, roots of complex number hyperbolic functions and their inverse. Logarithm of complex numbers separation into real and imaginary parts
BESII-1 Applied Mathematics – II	
CO201.1	Students learned to use Gamma and Beta functions for evaluating definite integrals in simplified way. Also they learned the technique of differentiation under integration sign to evaluate difficult definite integrals in engineering problems. They can find mean value, M.S.V. and R.M.S.V. of periodic functions
CO201.2	Students developed the skill to trace Cartesian, polar, parametric curves and can apply this knowledge to find area between two curves, surface area, volume of solid of revolution
CO201.3	Students can evaluate double and triple integrals and can apply this technique for finding area between two curves, volume, mass and C.G
CO201.4	Students can find triple, quadruple product of vectors and can solve vector equations. They can resolve components of vectors in different directions. They understand the concept of irrotational, solenoidal vectors, gradient and directional derivatives
CO201.5	Students developed the skill of evaluating line, surface and volume integrals. They evaluate multiple integrals using relation between single, double and triple integrals
CO201.6	Students can fit straight line, parabola and exponential curves to the given data using least square method. They can find lines of regression and correlation coefficient. Also Students know the techniques to find the missing terms in discrete data for unequal intervals and find analytical solution of difference equations which are very useful for various branches of engineering
BESI-3T Engineering Chemistry	
CO103.1	Students will understand the basic significance of quality of water for drinking and industrial use.
CO103.2	Students will understand various corrosion phenomena and their practical application to control corrosion in various situations.

CO103.3	Students will gain basic knowledge about the traditional construction materials and the new trends applied in the engineering field
CO103.4	Students will understand the basic principles of Green Chemistry and its applications for protection of the environment and learn the working of batteries and their applications in various fields of Engineering
BESII-3T Material Chemistry	
CO203.1	Students will learn the basic significance of non-Conventional energy sources and Bio-Fuels and their applications.
CO203.2	: Students will learn the use of liquid fuels in different types of engines and the basic concepts of combustion process to achieve minimization of environmental pollution.
CO203.3	Students will develop the ability to select the lubricants for various purposes
CO203.4	Students will gain knowledge of the properties and applications of contemporary polymers and composites along with the newer nano-materials in various engineering fields
BESI-2T Engineering Physics	
CO102.1	Understand the basic concepts in quantum mechanics. Able to use the acquired knowledge for engineering applications. Analyze and solve the mathematical based numericals in Engineering Physics.
CO102.2	Understand the basic concepts of Wave packet & Wave equation. Derive, Demonstrate, prove the expression for experimental based phenomenon in engineering physics.
CO102.3	Acquire fundamental understanding of concepts and principles concern to crystal structure and able to apply them for their engineering applications. Develop ability to apply acquired knowledge to solve engineering problems.
CO102.4	Develop ability to demonstrate theoretical fundamental concepts in Semiconductor Physics experimentally. Able to use the acquired knowledge to identify, draw, construct and design devices for engineering applications and solve engineering problems based on them.
BESII-2T Advanced Physics	
CO202.1	Acquire fundamental understanding of concepts and principles concern to laser & Wave optics and their engineering applications. Develop ability to apply acquired knowledge to solve engineering problems.
CO202.2	Develop ability to demonstrate theoretical concept experimentally concern to Electron ballistics and to apply the acquired knowledge to solve engineering problems
CO202.3	Gain understanding of fundamental concepts and principles concern to Electron optics and their engineering applications.
CO202.4	Understand fundamental concepts and principles concern to Fibre optics & Nanoscience and apply them for their engineering applications. Develop systematic logical approach to apply acquired knowledge to solve engineering problems

BESI-7P Communication Skill	
CO107.1	Students learn the correct method for formal correspondence in writing letters, reports

	and resumes.
CO107.2	Students learn the correct method for formal correspondence in writing letters, reports and resumes.
CO107.3	To clear the concept of grammar usage and vocabulary.
CO107.4	To develop self confidence in oral communication and reading.
CO107.5	To overcome the barriers in the GDPI and develop analytical perspective through mock drills.
BESII-8T	Ethical Science
CO208.1	To understand the civic and law structure of society.
CO208.2	Applying psychology principal on human working conditions and have humanistic approach.
CO208.3	To understand the ethical concept of society in which on lives and be acquainted with the working environment and organization.
CO208.4	To gain knowledge of the Country's Constitution and political structure of society
CO208.5	To understand the ethical concept of society in which on lives and be acquainted with the working environment and organization.

BEELE403T Digital And Linear Electronic Circuits	
CO403.1	Basic fundamentals of Logic gates, Flip Flops, Timers
CO403.2	Basic operational amplifier circuits.
CO403.3	Simple linear circuit.
CO403.4	Applications of Operational Amplifier.
CO403.5	Study of linear ICS.
BEELE404T Electrical Machines-I	
CO404.1	Principle, construction, connections, vector grouping, operation and testing of 3-phase transformer.
CO404.2	Conversion of 3-phase supply to 2- phase supply, parallel operation of 3-phase transformer.
CO404.3	Principle, armature and field construction, types, operation characteristics, armature reaction, commutation, methods to improve commutation in dc generators.
CO404.4	Principle, types, voltage build up, performance characteristics, torque evaluation in DC motors.
CO404.5	Principle, construction, types, torque development, performance characteristics, tests to determine performance indices & parameters of equivalent circuit of 3-phase and double cage induction motors, methods of starting, speed control and braking of induction motors
CO404.6	Revolving and cross field theories, operation, characteristics, types, equivalent circuit & tests.
BEELE405T Computer Programming	
CO405.1	Basic of C programming.
CO405.2	Use of arrays, searching and sorting techniques.
CO405.3	Use of pointers & structures.
CO405.4	Basics of C ⁺⁺
CO405.5	Basic of MATLAB and apply fundamental knowledge for analysis of basic engineering problems.
BEELE406T Environmental Studies	
CO406.1	The student on completion of course will understand the ecosystem.
CO406.2	Environmental issues related with social and human population.
CO406.3	Biodiversity and its conversion.
BEELE501T Electrical Power System - I	
CO501.1	Understand basics of Power System.
CO501.2	Modeling & representation of the system components used in power system.
CO501.3	Understand use of cables in distribution network.
CO501.4	Concept of designing transmission line parameters.
CO501.5	The basic concept of load flow analysis.
CO501.6	Analyze performance of generators & turbines.
BEELE502T Utilization Of Electric Energy	
CO502.1	Understand use of electric energy for industrial heating and welding.
CO502.2	Understand basics of Illumination and design of lighting schemes for Various applications.
CO502.3	Understand basics of Refrigeration and Air conditioning system.

CO502.4	Understand application of Fans & Pumps.
CO502.5	Understand compressors and DG systems and evaluate their performance.
BEELE503T	Electrical Machine Design
CO503.1	Select proper material for design of a machine.
CO503.2	Design an overall transformer and estimates its performance characteristics as per requirements and constraints specified.
CO503.3	Design rotor core of Induction Motor.
CO503.4	Design overall dimensions of synchronous machines.
BEELE504T	Microprocessor & Interfacing
CO504.1	Student should be able to use and apply VLSI circuit concept.
CO504.2	Introducing to INTEL 8085A architecture.
CO504.3	Programming Instructions
CO504.4	Interrupts
CO504.5	Methods of data transfer
CO504.6	Hardware and Interface
BEELE505T	Electrical Machines-II
CO505.1	Understand Principle, construction and operation of synchronous machine.
CO505.2	Understand parallel operation of synchronous generators and experimental determination of parameters.
CO505.3	The student has understood principle, construction, methods of starting synchronous motor, its operation with variable load, operation with variable excitation, performance evaluation.
CO505.4	The student has understood special motors like Repulsion, Hysteresis, Reluctance, Universal and Schrage motors.
BEELE601T	Power Station Practice
CO601.1	Understand various sources of electrical energy and different factors related to generating stations and connected load.
CO601.2	Study general layout, major equipments and auxiliaries in thermal power station.
CO601.3	Learn basics of hydro power station.
CO601.4	Learn basics of nuclear, power generation, co-generation, and captive power generation.
CO601.5	Calculate tariff for different customers.
BEELE602T	Engineering Economics & Industrial Management
CO602.1	After the completion of course the students will be able to manage the thing economically
BEELE603T	Electrical Drives & Their Control
CO603.1	Learn speed/ torque characteristics of common drive motor and analyze behavior of electric motor during starting, running, and breaking.
CO603.2	Select motor for continuous and intermittent operation.
CO603.3	Study PLC and applications on electric drives.
CO603.4	Study operation of relays and contractors and design control panel for MCC.
CO603.5	Study and analysis of traction motors.
CO603.6	Learn basics of industrial drives.
BEELE604T	Power Electronics

CO604.1	Understand basic operation of various power semiconductor devices and switching circuits.
CO604.2	Analysis and design of power electronic converter circuit.
CO604.3	Study power electronics for performance and improvement of power system and electric machines.
CO604.4	Study principle and operation of DC choppers.
CO604.5	Study and analyze power electronic inverter circuits.
BEELE605T Control System - I	
CO605.1	Model the linear systems and study the control system components specifications through classical and state variable approach.
CO605.2	Understand the time response and time response specifications.
CO605.3	Analyze the relative stability through root locus method.
CO605.4	Frequency response tools like bode plot and nyquist plot.
CO605.5	Understand the introductory concepts of state variable approach.
BEELE701T Control Systems –II	
CO701.1	Understand the basic knowledge of compensation in time and frequency domain.
CO701.2	Design and analysis of practical system for the desired specifications through state variable approach.
CO701.3	Analyze the optimal control with and without constraints.
CO701.4	Analysis of non-linear control system for various non-linearities.
CO701.5	Analysis of digital control system.
BEELE702T Electrical Power System – II	
CO702.1	Analysis of power system using symmetrical components transformation.
CO702.2	Do symmetrical fault analysis.
CO702.3	Do unsymmetrical fault analysis.
CO702.4	Understand the concept of steady state and transient stability.
CO702.5	Understand the economic scheduling of power system.
CO702.6	Understand the various types of neutral grounding and compensation.
Elective- I BEELE703T (1) I.T. & Its Applications In Power System Control	
CO703(1).1	Understand the communication used for automation.
CO703(1).2	Understand the various aspects of energy auditing in industry
CO703(1).3	Do the networking of communication in industry with instrumentation and microprocessors.
Elective- I BEELE703T (2) Fuzzy Logic & Neural Network	
CO703(2).1	Understand the fundamentals of fuzzy logic and ANN.
CO703(2).2	Learn different neural networks
CO703(2).3	Learn concepts of Associative memories and self organizing network.
Elective- I BEELE703T (3) Flexible Ac Transmission Systems	
CO703(3).1	Understand basic concept of FACTS
CO703(3).2	Understand voltage and current source converters for FACTS.
CO703(3).3	Understand basic knowledge of shunt compensator.
CO703(3).4	Understand basic knowledge of series compensator.
CO703(3).5	Understand static voltage and phase angle regulators.
CO703(3).6	Understand basic knowledge of combined series and shunt compensators.

Elective- I BEELE703T (4) Energy Management And Audit	
CO703(4).1	Know Present energy scenario with need of energy audit and energy conservation.
CO703(4).2	Understand various aspects of energy audit and management.
CO703(4).3	Understand and analyze material and energy balance and study co-generation and waste heat recovery.
CO703(4).4	Understand key factors of energy action planning, monitoring and targeting.
CO703(4).5	Understand and incorporate electric and thermal energy management in the industry.
BEELE 704 T High Voltage Engineering	
CO704.1	Understand Breakdown mechanism in solid, liquid and gaseous medium.
CO704.2	Understand Lightening and switching over-voltages and protection of lines by lightening arrestors, ground wires and surge absorbers.
CO704.3	Understand travelling waves and insulation co-ordination.
CO704.4	Understand generation of high voltage and current by different methods.
CO704.5	Understand measurement of high voltage and current by different methods in laboratories.
CO704.6	Do non destructive and high voltage testing of electrical apparatus by different techniques.
BEELE 705 T Electrical Installation Design	
CO705.1	The students will understand concept of load forecasting, solve problems based on regression analysis.
CO705.2	The students will be able to draw single line diagram with specifications for electrical distribution network for residential and commercial installations and will able to draw single line diagrams with specifications for distribution networks, motors and power control centers for industrial installations and design reactive power compensation.
CO705.3	The students will be able to understand construction, types and selection of PVC/XLPE cables and overhead conductors.
CO705.4	Students shall be able to design 11KV and 33KV substations for utility and industrial installations and specify the ratings and specification of apparatus used and they will be able to understand procedure for receipt, storage, testing and commissioning of transformers along with its accessories viz OTI, WTI, Silica gel breather, MOG, buchholz relay etc
CO705.5	Students will be able to determine fault level at various locations in radial networks and be able to find rating and location of series reactor.
CO705.6	Students will understand the relevant provisions of IE rules for low, medium and high voltage installations and will be able to understand provisions for system and equipment earthing as per IS 3043
BEELE706 P Project Seminar	
CO706.1	Do literature survey using library, internet, technical journals, product catalog, datasheets etc for a defined area.
CO706.2	Understand & deliver the seminar topic.
CO706.3	To enhance the skills of self- study and lifelong learning.
ELECTIVE-II BEELE 801T (4) - EHV AC & HVDC Transmission	
CO801(4).1	Student will be able to demonstrate the knowledge of Power handling capacity of different Transmission systems.

CO801(4).2	Effect of Electrostatic and electromagnetic fields and corona due to EHVAC lines.
CO801(4).3	Voltage control and current control systems for power flow controls in HVDC system.
CO801(4).4	The knowledge of design parameters of AC filters as well as DC filters and Reactive power compensation.
CO801(4).5	Overall knowledge about the HVDC system such as MTDC, protection and substation layout of HVDC power plant.
ELECTIVE-III BEELE 802 T (3) Power Semiconductor Based Drives	
CO802(3).1	Understand dynamics of electrical drives.
CO802(3).2	Understand and analyze the motor drives using power electronics devices.
CO802(3).3	Understand and analyze AC motor using power electronic devices.
CO802(3).4	Study the special motors and energy conservation in electrical drives.
CO802(3).5	Understand the traction drives.
ELECTIVE-III BEELE 802 T (4) Electrical Distribution System	
CO802(4).1	Student will able to calculate different distribution factors.
CO802(4).2	Understand classification of load, types of load curves.
CO802(4).3	Control of voltage and reactive power in distribution system.
CO802(4).4	Understand distribution automation.
CO802(4).5	Understand distribution substation layout with associated equipments.
BEELE 803 T Switch Gear And Protection	
CO803.1	Student has understood theory and application of main components used in power system protection.
CO803.2	Protection systems used for electric machines, transformers, bus-bars, transmission lines.
CO803.3	Theory, construction and applications of main types of circuit breakers.
CO803.4	Design the protection system needed for each main part of a power system.
BEELE 804 T Computer Applications In Power System	
CO804.1	Students will be able to determine bus Impedance & Admittance matrix by graphically, inspection and building algorithm.
CO804.2	Load flow study of a power system by Newton- Raphson and Gauss- Seidal iterative method.
CO804.3	Short circuit studies.
CO804.4	Transient stability by using Eulers, Modified Eulers and RK-4 th order differential method.
BEELE805P Project	
CO805P.1	Students will be able to apply technical & Managerial skills for analysis, design, simulation & modeling of Engineering problems.
CO805P.2	To learn the time & Finance management for task completion in a group with professional ethics.
CO805P.3	To present their work in a professional manner.
CO805P.4	To enhance the skills of self study and lifelong learning.

INFORMATION TECHNOLOGY**BEIT301T****Applied Mathematics- III**

CO301.1	Student can identify Laplace transforms & inverse Laplace transforms of various types of function, its properties and apply it to solve differential equation and are able to use in engineering Problems.
CO301.2	Students can use Fourier Transforms and its inverse in practical applications, problems for the wave or diffusion equations can be solved easily using the Fourier Transform.
CO301.3	Student are capable to find the Z- Transform, inverse Z-Transforms of a sequence, identify its region of convergence and develop an ability to solve problems in various branches of Engineering.
CO301.4	Student can determine Eigen values and Eigen vector sand These solution of line are differential equation using matrix method and student to apply concept of matrices and its application for solving engineering problems
CO301.5	One can obtain random variables corresponding to random experiments; Specify probability density and cumulative distribution functions for both discrete and continuous random variables. Calculate the distributions for functions of random variables.
CO301.6	The mathematical expectation enables us to learn and apply a shortcut formula for the variance, deviation, std. deviation . Also it is used to find moments, moment generating functions using shortcut method for various applications.

BEIT302T**Programming Logic Design in 'C'**

CO302.1	Understand the basic terminology used in computer programming and write, compile, debug programs in C language. Also Use different data types, decision structures and loops in a computer program.
CO302.2	Understand and apply the in-built functions and customized functions for solving the problems and apply the pointers, memory allocation techniques.
CO302.3	Learn about built in and customized functions of strings. Use arrays, structures and Union with pointer in computer program.
CO302.4	Understand about miscellaneous functions and use different file functions for dealing with variety of problems.
CO302.5	Understand memory allocation functions as well as Graphic's functions to implement
CO302.6	Learn about Bios functions and Terminate and Stay resident program.

BEIT303T**Ethics in IT**

CO303.1	Understand the role of ethics within the field of Information Technology and business world
CO303.2	Understand the essential issues related to information security, how to take precautions and use techniques and tools to defend against computer crimes.
CO303.3	Learn many of the key ethical, legal and social issues related to information technology and how to interpret and comply with ethical principles, laws, regulations, and institutional policies.
CO303.4	Apply creative thinking to solve basic technology problems in a business setting and

	Cultivate the critical and analytical thinking skills necessary to successfully manage ethical decisions and dilemmas in management.
CO303.5	Understand the core IT concepts in arrange of current and emerging technologies and learn to apply appropriate technologies to a range of tasks
CO303.6	Understand the ability to communicate, create, and collaborate effectively using state-of-the-art information technologies in multiple modalities.
BEIT304T Digital Electronics And Fundamentals of Microprocessor	
CO304.1	Conversion among different number system became familiar with basic logic gates and understands Boolean Algebra and simplifies simple Boolean function by using basic K-map Boolean properties.
CO304.2	Develop ability to design minimize the min & max term by using the concept to K-map up to five variables in SOP & POS from.
CO304.3	Gain fundamental understanding Of concepts and student will able to Design Combinational Circuits and the inter-conversions.
CO304.4	Understand the design of sequential Circuits such as Flip-Flops, Registers and Counters. Develop systematic logical approach to apply acquired knowledge to design Synchronous and Asynchronous Counter. .
CO304.5	Understand fundamental concept to find internal architecture of Intel8085 and basic principles of Input / Output and Instruction Set.
CO304.6	Understanding the concept of programming of Intel8085,so student will able to write assembly language program.
BEIT305T Data Communication	
CO305.1	Understand the network design and setting up of a network environment with all the necessary data communication components, procedure and techniques that make it functional.
CO305.2	Understand and explain the principles of a layered protocol architecture(OSI&TCP/IP) also able to identify and describe the system functions in the correct protocol layer and further describe how the layers interact and addressing used by each layer.
CO305.3	Able to Formulate and interpret the presentation and processing of signals (analog &digital) in communication systems. can differentiate coding schemes and able to convert analog signals to digital signal.
CO305.4	Assess and evaluate different analogue and digital modulation and demodulation techniques, Gain an ability to distinguish between different signal conversion techniques, multiplexing techniques
CO305.5	Develop ability to Understand, explain and calculate data transmission over different types of communication media (guided or unguided media).
CO305.6	Differentiating the various types of network configurations & connecting devices and applying them to meet the changing and challenging networking needs of organizations.
BEIT306T Environmental Engineering	

CO306.1	Students will understand the importance and become aware of the upcoming environmental issues
CO306.2	Students will understand the importance of natural resources and can work for their conservation
CO306.3	Students will gain knowledge about the various ecosystems existing in nature and their importance for conservation of nature
CO306.4	Student will learn about the biodiversity at local, national and global levels and the importance of wild life conservation
CO306.5	Students will gain knowledge about different types of environmental pollution, their effects and control of pollution for the benefit of mankind
CO306.6	Students will learn the social issues through various Acts under the constitutional provisions.

BEIT401T	Discrete Mathematics And Graph Theory
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CO401.1	Students will be able to describe several areas of mathematics beyond calculus , express their interest in mathematics ,understand why mathematical thinking is valuable in daily life and solve equations and inequalities both algebraically and graphically.
CO401.2	Students will be able to compute the Cartesian product of sets , find the domain , co-domain and range of a relation. Draw the graphs of various types of relations and perform the algebraic operations on real functions.
CO401.3	The study of group theory aims to introduce students to some more sophisticated concepts , results as an essential part of general mathematical culture and as a basis for further study of more advanced mathematics
CO401.4	To know concepts from the theory of rings such as zero divisor, division rings and fields which form the essentials of the mathematics Lattice is an introduction to partially ordered sets. Knowledge of Boolean algebra serves two main purposes: firstly, to describe and define the function of a logic circuit; and secondly by simplifying the Boolean expression defining a particular circuit, one can simplify or reduce the associated hardware.
CO401.5	Students will be able to model and solve real-world problems using graphs and trees, both quantitatively and qualitatively.
CO401.6	Students will be able to apply diverse counting strategies to solve varied problems involving strings, combinations, distributions, partitions and analyze combinatorial, algebraic, inductive, formal proofs of combinatory identities.

BEIT402T	Algorithm And Data Structures
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CO402.1	Apply algorithm analysis techniques to evaluate the performance of an algorithm and to compare data structures.
CO402.2	Implement the basic and advance concepts of stacks and queues through programming.
CO402.3	Apply the concepts of Linked list on various problems and implement it.
CO402.4	Understand and apply fundamental algorithmic problems including Tree traversals, height balanced, weight balanced and AVL trees.
CO402.5	Implement various searching techniques on graphs and shortest paths algorithms.
CO402.6	Implement and know when to apply standard algorithms for searching and sorting. Design, implement, test, and debug programs using a variety of data structures

	including hash tables, collision handling techniques.
BEIT403T Theory Of Computation	
CO403.1	Analyze and design Finite State Automata, Regular Languages. Closure properties, Limitations, Pumping Lemma, finite automata, pushdown automata, Turing machines, formal languages, and grammars. Distinguish different computing languages and classify their respective types
CO403.2	Recognize and comprehend Grammars and Chomsky Hierarchy, CFLs, Regular Grammars, Chomsky Normal Form, for CFLs, Inherent Ambiguity of Context-Free Languages, Cock-Younger-Kasami Algorithm, Applications to Parsing. Pushdown Automata(PDA), PDA vs. CFLs. Deterministic CFLs.
CO403.3	Demonstrate their understanding of key notions, such as algorithm, computability, decidability, and complexity through problem solving. Demonstrate advanced knowledge of formal computation and its relationship to languages
CO403.4	Show a competent understanding of to Turing Machines, Configurations, Halting vs Looping. Multi-tape Turing machines. Recursive and Recursively enumerable languages. Undesirability of Halting Problem. Reductions. Introduction to Theory of NP-completeness.
CO403.5	Identify limitations of some computational models and possible methods of proving them. State and explain the relevance of the Church-Turing thesis.
CO403.6	Have an overview of how the theoretical study in this course is applicable to and engineering application like designing the compilers, post correspondence problem.
BEIT404T Computer Architecture And Organization	
CO404.1	Understanding of basic functional units and their operation. Students are able to calculate the effective address of an operand by addressing modes
CO404.2	Ability to understand how computer hardware has evolved to meet the needs of multi processing systems, Instruction Set Architecture: Instruction format, types, and gain fundamental concept to executions and sequencing of control signals.
CO404.3	Ability to understand the basic method and designing technique of the CPU: the ALU and control unit and understand the concept of microprogramming.
CO404.4	Understanding of how a computer performs arithmetic cooperation of positive and negative numbers. Understanding how computer stores floatingpointnumbersinIEEE754 standard
CO404.5	Understand the memory organization: SRAM, DRAM, concepts on cache memory, Memory Interleaving, Associative memory, Virtual memory organization.
CO404.6	Understand the I/O Organization: Basics of I/O, Memory-map pad I/O & I/O mapped I/O, Types of I/O transfer: Program controlled I/O, Interrupt-driven I/O, DMA.
BEIT405T Object Oriented Methodology	
CO405.1	To prepare and implement object-oriented design for small/medium scale problems
CO405.2	Understand how object-oriented concepts are incorporated into the programming Language
CO405.3	Understand the concept of class and object. Implement the constructor and destructor.
CO405.4	To understand the concept of inheritance and its types.

CO405.5	To understand the concept of polymorphism and types of polymorphism, virtual function.
CO405.6	Implement friend function .Apply file handling concept and implement various functions.
BEIT501T System Programming	
CO501.1	Understand the major concept areas of language translation, System programs and Operating system overview.
CO501.2	Acquired the knowledge of working of assembler and its use with various searching And sorting techniques.
CO501.3	Enriched with the knowledge of macros, its facilities and its use.
CO501.4	Enriched with the knowledge of loader and its use.
CO501.5	Understands the various phases of compiler and its use, code optimization techniques, machine code generation, and use of symbol table.
CO501.6	Enriched with the knowledge of databases used by translators like assembler, compiler and other system programs.
BEIT502T Design And Analysis Of Algorithms	
CO502.1	Study of algorithms, designing of algorithm and recurrence relationship.
CO502.2	Analyze different cases of running times of algorithms using asymptotic analysis and amortized analysis. Study different sorting networks.
CO502.3	Learn the divide-and-conquer paradigm and explain when an algorithmic design situation calls for it. Recite algorithms that employ this paradigm. Synthesize divide-and-conquer algorithms. Derive and solve recurrences describing the performance of divide-and-conquer algorithms. Find the different solutions using Greedy approach
CO502.4	Understand various problems based on dynamic programming. Understand searching techniques of graphs.
CO502.5	Understand what an approximation algorithm is, and the benefit of using approximation algorithms. Be familiar with some approximation algorithms, including algorithms that are PTAS or FPTAS. Analyze the approximation factor of an algorithm
CO502.6	Understand NP completeness and identify different NP complete problems.
BEIT503T Software Engineering	
CO503.1	Understand the need of wider engineering issues that form the background to developing complex and evolving software-intensive systems. Able to plan and deliver an effective software engineering process, based on knowledge of widely used development life cycle models.
CO503.2	Gain an ability of Identification and implementation of the software metrics. Defining the Basic concepts and importance of Software project management concepts like cost estimation, scheduling and reviewing the progress.
CO503.3	Be able to elicit requirements for product and translate these into a documented design. Understand different analysis modeling techniques.
CO503.4	An ability to apply knowledge of computing, science, and engineering appropriate to the discipline, particularly in the modeling and design of software systems and in the analysis of inherent in design decisions.

CO503.5	Understand the role of testing and reuse play in the implementation phase and how these activities relate to the wider software process.
CO503.6	Understand the basics of recursive function and their operations. Able to define and distinguish Bounded and Unbounded Minimization.
BEIT504T Computer Graphics	
CO504.1	Understand the basic terminology used in computer Graphics and write line drawing algorithms in C language.
CO504.2	To understand and explain Scaling, rotation, translation, rotation about arbitrary point, reflections, shearing. To learn about polygon filling techniques. Discuss various algorithms for scan conversion and filling of basic objects and their comparative analysis
CO504.3	Use of geometric transformations on graphics objects and their application in composite form. Use of geometric transformation on graphics objects and concept of Viewport
CO504.4	Understand about the concept segmentation and windowing and clipping techniques.
CO504.5	Understand the different methods used for curves and surfaces.
CO504.6	Understand and use the different color models, color applications and Animation
BEIT505T Java Programming	
CO505.1	Understand fundamentals of object-oriented programming in Java, including defining classes, invoking methods, using class libraries, etc.
CO505.2	Express the ability to use simple data structures like arrays, vectors in a Java program and String handling methods.
CO505.3	Understand packages and exception handling.
CO505.4	Able to use the Java environment to create, debug and run simple Java programs using multithreading concepts.
CO505.5	Explore I/O stream and file handling concepts.
CO505.6	Learn some advanced java concepts such AWT, Swings.
BEIT506T Industrial Economics And Entrepreneurship Development	
CO506.1	Understand the functional areas of accounting, marketing, finance, and management. Understand the local business environment and growth analysis
CO506.2	Understand how to use economic problem solving skills to discuss the opportunities and challenges of the increasing globalization of the world economy.
CO506.3	Understand market investment strategies and business growth Evaluate market and learn how to invest for capital formation
CO506.4	Understand how to Apply knowledge of key leadership concepts in an integrated manner. Understand how to Use the entrepreneurial mind-set and documentation work in their roles as entrepreneurs.
CO506.5	Understand how to identify the most recognized sources of potential funding and financing for business start-ups
CO506.6	Understand different investment policies and Apply decision-support tools to business decision making.
BEIT601T Computer Networks	

CO601.1	To develop a fundamental understanding of network design principal and performance. To know about the layered architecture of TCP/IP protocol suite. To understand about wireless network such as Bluetooth, WIMAX, IEEE 802.11
CO601.2	To learn about design Issues of data link layer and different framing techniques. To study the different Data Link Layer protocols and different types of channel allocation techniques.
CO601.3	To learn about the design issues of Network layer and IPV4, IPV6 addressing system. To know about arrays and how to use arrays for searching and sorting. Demonstrate the ability to solve problems using different network algorithms
CO601.4	To study the different elements of transport protocol and different types of transport service primitives. To learn various client server model, processes and socket system calls.
CO601.5	To study different protocols such as BOOTP, DHCP, DNS, FTP, TFTP To study the packet formats, command processing, file transfer.
CO601.6	Learn about the transport layer security and application layers security and security at the IP layer IPSec.
BEIT602T	Operating System
CO602.1	To understanding of design issues associated with operating systems.
CO602.2	To know issues related to file system interface and implementation, disk management.
CO602.3	To understand various process management concepts including scheduling, synchronization.
CO602.4	To learn about memory management including virtual memory.
CO602.5	To studies stemmer sources sharing among the users.
CO602.6	Be familiar with protection and security mechanisms and deadlock handling.
BEIT603T	Database Management Systems
CO603.1	Explore the various models of DBMS and levels in the architecture of DBMS.
CO603.2	Relate the problems in day to day life by implementing the Entity relationship model and understanding queries in terms of relational algebra.
CO603.3	Understand complex queries using PL/SQL also techniques to improve performance of database.
CO603.4	Understand the various database optimization techniques to serve the industry in more efficient way.
CO603.5	Face and resolve the crash in database system.
CO603.6	Apply various database recovery techniques also understands various databases.
BEIT604T	Internet Programming
CO604.1	Be familiar with the main uses of the Internet as the primary modern technology for online communication;
CO604.2	Understand the implications of Internet on society, primarily in the aspects of communication, commerce, crime, ethics, and privacy;
CO604.3	Understand the generic principles of computer programming as applied to implementing basic web-based applications;
CO604.4	Use the knowledge both of algorithmic functions and of computer programming in

	web-based application settings;
CO604.5	Provide knowledge of and proficiency in basic techniques for the development of web-based applications,
CO604.6	Provide basic knowledge of construction techniques related to client-server applications.
BEIT605T	Functional English
CO605.1	Students have better reading comprehension, pronunciation, and functional English grammar.
CO605.2	Students are able to write letters and resumes
CO605.3	Students are able to organize their thoughts for Effective presentation and writing.
CO605.4	Students are able to learn skills to present themselves well in an interview, and handle a Group Discussion.
BEIT701T	Data Warehousing And Mining
CO701.1	Design a data mart or data warehouse for any organization.
CO701.2	Solve basic statistical calculations on data and describe the aspect of data pre-processing.
CO701.3	Gain fundamental knowledge of multidimensional schemes suitable for data warehousing.
CO701.4	Understand various data mining functionalities and Apply the concept of data mining components and technique in designing data mining systems.
CO701.5	Understand fundamental concept of frequent Items sets, closed Items sets and mining various kinds of association rules.
CO701.6	Understanding the concept of Business Intelligence and their applications , developing of BI system.
BEIT702T	Computer System Security
CO702.1	Understands the basic concept of Cryptography and Network Security, their models and Algorithms.
CO702.2	Understand the basic concept of Crypt analysis attack, to provide security from Crypt analysis attack study various Algorithms and mathematical models.
CO702.3	To get aware of public key cryptography by studying various algorithms.
CO702.4	Understand the basic concept of Encryption and Authentication with the help of various applications and their working.
CO702.5	Acquire knowledge of Email service and key management by studying various protocols.
CO702.6	To get aware of web security, Network security, virus, worms and firewall by studying various network layers and the supportive protocols at each network layer.
BEIT703T	Artificial Intelligence
CO703.1	Analyze AI problems with respect to several problem characteristic
CO703.2	Understand the concepts of heuristic search Techniques.
CO703.3	Solve knowledge representation Issues
CO703.4	Understand Natural language processing and its Application
CO703.5	Design the Expert system for a given problem.

CO703.6	Understand the concept of Fuzzy logic and Bayes theorem.
BEIT704T1 Elective-I Mobile Computing	
CO704.1	To provide the student with an understanding of the Cellular concept, Frequency reuse, Hand-off strategies.
CO704.2	To provide the student with an understanding of Equalization and diversity reception techniques
CO704.3	To give the student an understanding of digital cellular systems (GSM, GPRS, WAP, cdma2000, and W-CDMA)
CO704.4	To illustrate architecture and protocols in pervasive computing and
CO704.5	To design successful mobile and pervasive computing applications and services
CO704.6	To give practical experience in the area through the design and execution of a modest research project.
BEIT704T2 Elective-I Multimedia Systems	
CO704.1	Explain multimedia concepts such as the elements and principles of design, color theory, and compression schemes.
CO704.2	Demonstrate knowledge and skills in the use of software for graphics (Adobe Photoshop), video (Adobe Premiere), and animation (Adobe Flash) through exercises and projects.
CO704.3	Plan, design, develop and evaluate multimedia applications and their elements
CO704.4	To introduce multimedia quality of service (QoS) and to compare subjective and objective methods of assessing user satisfaction.
CO704.5	To analyse the ways in which multimedia data is transmitted across networks, and to discuss privacy and copyright issues in the context of multimedia.
BEIT704T3 Elective-I Bio-Informatics	
CO704.1	Assess the role of information technology in the formation and use of knowledge.
CO704.2	Compare and contrast various technology and data resources needed for retrieving, storing, analyzing, managing, and communicating information for the delivery of nursing and healthcare.
CO704.3	Integrate information technology (IT) culture, processes, roles, related terminology, and applications in the practice of nursing.
CO704.4	Simulate participation as a team member in the Bio-informatics life cycle.
CO704.5	Evaluate issues for security standards of automated applications in healthcare, including strategies to secure healthcare information from internal and external risks and threats.
CO704.6	Demonstrate how to provide consumers and healthcare institutions with information to access, evaluate, and use electronic healthcare information and resources.
BEIT704T4 Elective-I Compiler Design	
CO704.1	To understanding of design issues associated with operating systems.
CO704.2	To know issues related to file system interface and implementation, disk management.
CO704.3	To understand various process management concepts including scheduling, synchronization.
CO704.4	To learn about memory management including virtual memory.
CO704.5	To study system resources sharing among the users.
CO704.6	Be familiar with protection and security mechanisms and deadlock handling.

BEIT705T1 Elective-II Software Testing And Quality Assurance	
CO705.1	Understanding credible research resources verified through methodological software engineering research processes.
CO705.2	Previous experience in presenting a peer-reviewed paper, writing a peer-reviewed software engineering research paper, and participating in the peer-review of presentations and papers.
CO705.3	Software Testing Techniques, Measures, and Process
CO705.4	Experience in conducting a software engineering research project based on peer-reviewed research literature, and following sound research methodologies.
BEIT705T2 Elective-II Cluster And Grid Computing	
CO705.1	Explore the area of Cluster Computing with fundamental details.
CO705.2	Understand high availability, simulation model and process scheduling for cluster technology; learn various case studies of cluster system.
CO705.3	Learn and design, architecture and to apologies of grid computing.
CO705.4	Understand traditional paradigms for distributed computing and web services.
CO705.5	Understand semantic grid and autonomic computing.
CO705.6	Know the basic services including Grid security, Grid monitoring, Grid scheduling.
BEIT705T3 Elective-II Digital Signal Processing	
CO705.1	To develop skills for analyzing and synthesizing algorithms and systems that process discrete time signals, with emphasis on realization and implementation.
CO705.2	Represent discrete-time signals analytically and visualize them in the time domain.
CO705.3	Understand the meaning and implications of the properties of systems and signals.
CO705.4	Understand the Transform domain and its significance and problems related to computational complexity.
CO705.5	Be able to specify and design any digital filters using MATLA
BEIT705T4 Elective-II Digital Forensic For Information Technology	
CO705.1	Assess many of the opportunities and challenges associated with digital information systems that you have not
CO705.2	seen before and explain them to those who have less technical background than you
CO705.3	Actively contribute to discussions about design, maintenance and changes to the information systems that
CO705.4	support digital collections for which you are responsible
CO705.5	Read and understand the information technology trade press, recognizing opportunities and strategic implications
CO705.6	for the management of digital collections
CO705.7	Contribute substantive recommendations for policies related to the management of digital collections.
BEIT801T Distributed Systems	
CO801.1	To learn the principles, architectures, algorithms and programming models used in distributed systems.
CO801.2	Understand the implications of Distributed System on society, primarily in the aspects of communication, commerce, crime, ethics, and privacy;
CO801.3	To learn the requirement and importance of algorithmic functions and computer programming in distributed systems.

CO801.4	Introduction to the fundamentals of distributed computer systems, assuming the availability of facilities for data transmission.
CO801.5	The structure of distributed systems using multiple levels of software is emphasized.
CO801.6	Provide knowledge of and proficiency in basic techniques for the develop, design and implement sample distributed systems.
BEIT802T	Gaming Architecture And Programming
CO802.1	Strong technical skills suitable for professional programming roles in the game industry.
CO802.2	Specialist knowledge in computer graphics, AI, physics and audio.
CO802.3	The ability to design and build game engines from scratch in industry standard languages, including C++.
CO802.4	Knowledge of the games development process, including the pitch, design, and use of a game engine to build a demo.
CO802.5	Experience of the planning, management and execution of a major games technology project.
BEIT803T1	Elective-III Embedded Systems
CO803.1	To introduce the embedded Hardware and Interfacing.
CO803.2	To make the students familiar with software development & tools for embedded systems.
CO803.3	The objective of the course is to cover the Hardware Design, Software Development & RTOS for the Embedded Systems.
BEIT803T2	Elective-III Digital Image Processing
CO803.1	Understand the mathematical foundations for digital image representation, image acquisition, image transformation, and image enhancement.
CO803.2	Understand the mathematical principles of image restoration, image compression, and image segmentation.
CO803.3	develop a theoretical foundation of fundamental concepts of digital image processing.
BEIT803T3	Elective-III Pattern Recognition
CO803.1	Explain and compare a variety of pattern classification, structural pattern recognition, and pattern classifier combination techniques.
CO803.2	Summarize, analyze, and relate research in the pattern recognition area verbally and in writing.
CO803.3	Apply performance evaluation methods for pattern recognition, and critique comparisons of techniques made in the research literature.
CO803.4	Apply pattern recognition techniques to real-world problems such as document analysis and recognition.
CO803.5	Implement simple pattern classifiers, classifier combinations, and structural pattern recognizers.
BEIT803T4	Elective-III Machine Learning
CO803.1	To understand the basic building blocks and general principles that allow one to design machine learning algorithms
CO803.2	To become familiar with specific, widely used machine learning algorithms

CO803.3	To learn methodology and tools to apply machine learning algorithms to real data and evaluate their performance.
BEIT804T1 Elective-IV Cyber Security	
CO804.1	To understand the concept of cyber space, natives and various types of cyber crimes.
CO804.2	To study Legal aspects of E-Commerce, IPR and Domain Name resolution.
CO804.3	Discuss scope and limitations of IT Act of India.
BEIT804T2 Elective-IV Cloud Computing	
CO804.1	Understand cloud computing concept and a systematic knowledge of the fundamental technology and characteristics.
CO804.2	Learn the main concepts of cloud computing services and virtualization technology.
CO804.3	Explore and understand various cloud platforms and web services provided by Google, Amazon and Microsoft.
CO804.4	Learn the broad approaches to cloud migration and various applications of Cloud.
CO804.5	Identify and understand the core issues of cloud computing such as security and storage.
CO804.6	Learn various cloud computing tools and future cloud.
BEIT804T3 Elective-IV E-Commerce And Enterprise Resource Planning	
CO804.1	To modernize and integrate business processes and systems. This “leapfrog” into the future will empower staff and students
CO804.2	To access information and provide services through an intuitive and integrated interface Improve Service Experience
CO804.3	To Enhance Competitiveness to Modernize Business Processes and Systems
CO804.4	To Automate Business Solutions to Increase Operating Efficiency
CO804.5	To Provide Access to Standardized College Data
BEIT804T4 Elective-IV Wireless Sensor Networks	
CO804.1	To Understand the basic WSN technology and supporting protocols, with emphasis placed on standardization basic sensor systems and provide a survey of sensor technology.
CO804.2	Understand the medium access control protocols and address physical layer issues
CO804.3	Learn key routing protocols for sensor networks and main design issues
CO804.4	Learn transport layer protocols for sensor networks, and design requirements
CO804.5	Understand the Sensor management ,sensor A11

CIVIL ENGINEERING

I SEMESTER

Basic Civil Engineering

C101.1	Know the scope of civil engineering in various fields and understand and describe the basic terms related to survey, planning, and construction of infrastructure.
C101.2	Understand and define the terms related to water and waste water generation and treatment.
C101.3	Understand and explain the basic terms related to water resources and its management
C101.4	Understand the concept of green building and define the terms related to its rating and certification.

II SEMESTER	
Engineering Mechanics	
C202.1	Acquire the basic knowledge of resolution of various forces acting on the rigid bodies.
C202.2	Understand and analyze the effect of forces on the rigid bodies with the help of various laws and theories.
C202.3	Explain and draw the effect of forces on rigid bodies.
C202.4	Apply the basic knowledge obtained in engineering mechanics in solving the engineering problems.
Engineering Mechanics (Practical)	
C202.1	Perform the test to ascertain the equilibrium of a body under various systems of forces.
C202.2	Perform the tests to understand the terminology related to simple lifting machine, friction, mass moment of inertia.
C202.3	Calculate and draw a graphical solution to problems of equilibrium.
THIRD & FOURTH SEMESTER	
BECVE301T	Mathematics - III
After studying this subject, the students will be able to	
C301.1	The students would be able to solve numerical on Fourier Series & partial differential equations.
C301.2	The students would be apply partial differential equations in column buckling problems, behavior of structures subjected to dynamic loads and in unsteady flow problems in fluid mechanics.
C301.3	The students would be apply problems related to finite element analysis using calculus of variations.
C301.4	The students would be able to analyze structures for static and dynamic loads using matrices and Eigen value.
C301.5	There are several applications of Numerical methods using computers especially in structural and Fluid Mechanics where classical solutions are tedious.
C301.6	The students would be able to optimize the recourses using simplex methods of linear programming.
BECVE302T	Strength of Materials
After studying this subject, the students will be able to	
C302.1	Understand the behavior of materials under different stress and strain conditions.
C302.2	Calculate & draw shear force and bending moment diagram for beams under loading conditions.
C302.3	Analyze the bending stress, shear stress, torsion, tension & deflection of beam under different loading conditions.
C302.4	Evaluate principal stresses and strains.
BECVE302P	Strength of Materials (Practical)

After the conduction of practical's will be able to perform the test to:	
C302.1	Understand the concept and application of various types of strain gauges.
C302.2	Perform various tests and evaluate different engineering properties of engineering materials by performing different test on it.

C302.3	Obtain a graphical solution to SFD & BMD problems for simple beams.
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BECVE303T Environmental Engineering – I	
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After studying this subject, the students will be able to	
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C303.1	Understand the function of various units of water supply scheme and apply the knowledge in planning and design of water supply system.
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C303.2	Calculate the capacity of water supply scheme.
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C303.3	Have the basic knowledge related to the water conveyance systems and the appurtenances used.
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C303.4	Have knowledge of characteristics of water, drinking water standards and necessity of treatment.
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C303.5	Design various units of conventional water treatment plant.
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C303.6	Have the basic knowledge related to generation, collection, treatment disposal of solid waste.
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BECVE 303 P Environmental Engineering – I (Practical)	
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C303.1	Perform different tests to ascertain physical, chemical and biological characteristic of given water sample.
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C303.2	Understand the importance of levels of BOD & COD in a waste water treatment and know various methods to determine the same.
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C303.3	Understand and visualize the working of various units of Water Treatment Plant during the visit and can write a report.
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BECVE304T Engineering Geology	
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C304.1	Understand the origin of various types of minerals & rocks and describe their fundamental properties.
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C304.2	Understand and explain the terms related to structural, mineral geology and geomorphology.
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C304.3	Identify and describe dip, strikes, folds and faults
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C304.4	Understand the basic terms related to the earthquake and assess the safety civil engineering structures in different seismic zones.
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C304.5	Apply the basic knowledge of engineering geology in assessing the suitable site for civil engineering projects like dams, tunnels.
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C304.6	Understand importance of geo-hydrological and geo-physical information of area in planning the civil engineering structure.
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BECVE 304P Engineering Geology (Practical)	
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C304.1	Identify the rocks and minerals based on the knowledge of its fundamental properties.
C304.2	Identify dip and strike folds and faults and can show it on the maps.
C304.3	Understand and visualize the geological phenomenon during the visit and can write a report.
BECVE305T Concrete Technology	
C305.1	Have the knowledge of types, properties and role of different constituents of concrete like cement, fine and coarse aggregate, water, etc.
C305.2	Understand and explain the batching, mixing, production, transportation and placement of concrete to achieve the desired results.
C305.3	Analyze and explain the properties of fresh and hardened concrete.
C305.4	The students will acquire the knowledge and describe the strength and durability of concrete.
C305.5	Understand the properties of admixtures and describe its application in various situation and requirement in concrete construction.
C305.6	Assess the strength of concrete based on the fundamental knowledge of nondestructive testing.
BECVE 305P Concrete Technology (Practical)	
C305.1	Perform different tests on cement, coarse and fine aggregate to ascertain the properties useful in production of good concrete and do the actual mix design of concrete
C305.2	Perform the tests on hardened concrete to understand and know its compressive strength variation.
C305.3	Ascertain the quality of concrete by performing non-destructive testing of the existing concrete.
BECVE401T Structural Analysis – I	
C401.1	Understand the concept of determinate and indeterminate structure.
C401.2	Understand the effect of moving load and can analyze and draw the influence line diagrams.
C401.3	Understand and apply different methods and theorems in the analysis of various structures
C401.4	Compute the effect of vertical loads on beams, columns and arches and understand the phenomenon related to it.
C401.5	Understand the concept of degree of freedom and slope deflection and can apply the knowledge in analyzing the frames.
C401.6	Understand the basics matrix method of analysis of structures.
BECVE 401P Structural Analysis – I (Practical)	
C401.1	Apply the knowledge of different methods of analysis of structures to analyze the structural elements.

C401.2	Use the understanding obtained in theorems & principles of analysis of structure and verifies the same experimentally.
C401.3	Understand the working principle and use of Strain gauges and Poloriscope in structural analysis.
BECVE402T/3CE04T Geotechnical Engineering -I	
C402.1	Understand the origin of soil and to identify different types of soil.
C402.2	Define and determine the index and engineering properties of the soil
C402.3	Apply the knowledge of soil properties in determining the suitability of foundation for a particular type of soil.
C402.4	Understand the concept of seepage and permeability of soil and classify its suitability in various engineering works.
C402.5	Evaluate the shear stresses and strength of the soil mass.
C402.6	Understand the concept of compressibility of soil using compaction and consolidation process.
BECVE402P/3CE04P Geotechnical Engineering -I (Practical)	
C402.1	Identify and classify soil based on engineering properties of soil.
C402.2	Understand and determine the density and shear strength parameters of soil of a soil using various tests.
C402.3	Understand the use of different charts for classifying soil or knowing the stress under the soil.
BECVE403T/5CE04T Transportation Engineering – I	
C403.1	Exhibit the knowledge of planning, design and construction practices in highway & bridge engineering.
C403.2	Acquire the knowledge of geometric design and the fundamental properties of highway materials and draw appropriate conclusion.
C403.3	Understand and use the concept of different methods in design, construction, inspection and maintenance of the pavement.
C403.4	Undertake various Traffic studies and apply the knowledge in planning and design of pavement and geometrics
C403.5	Understand and describe the terms related to bridge and hydrological parameters of importance in bridge design.
C403.6	Understand the explain different sub-structures and super-structures of a bridge and its construction, inspection and maintenance.
BECVE403P/5CE04P Transportation Engineering – I (Practical)	
C403.1	Understand the classification and strength parameters of sub-grade soil through various tests.

C501.5	Understand & use the concepts related to structural dynamics.
C501.6	Understand the use of applicable software in structural analysis.
BECVE501P	Structural Analysis -II (Practical)
C501.1	Apply practical knowledge of structural software, in analysis and design of structural components.
C501.2	Understand basics of stiffness matrix, for the evaluation of displacement, moments etc.
C501.3	Apply the knowledge into evaluation of appropriate solution to engineering problems with the help of software and modern tools.
BECVE502T	Reinforced Cement Concrete Structures (RCC)
C502.1	Understand the basic concepts of structural design Methods of RCC to the practical problem
C502.2	Understand the composite action of reinforced steel and concrete in reinforced concrete structural members
C502.3	Use the knowledge of the structural properties of materials i.e. steel and concrete in assessing the strength.
C502.4	Use the knowledge in structural planning and design of various components of buildings.
C502.5	Apply the concepts and applications of prestressed concrete in real problems
BECVE502P	Reinforced Cement Concrete Structures (RCC) (Practical)
C502.1	Apply the knowledge in actual structural design for various buildings.
C502.2	Make use of structural design knowledge in reading and understanding the professional RCC drawing and draw an appropriate conclusion.
C502.3	Understand the implementation of working drawing and write a report during the visit to any construction site.
BECVE503T	Fluid Mechanics-I
C503.1	Measure and determine fluid pressures and forces on plates/surfaces, pipe bends, etc.
C503.2	Apply the principles of hydrostatics and determine the forces
C503.3	Apply the Bernoulli's equation to solve the problems in fluid.
C503.4	Understand the basic concepts related to laminar and turbulent flow
C503.5	Apply the knowledge of various instruments in flow measurement & its control
C503.6	Understand the concepts of dimensional analysis use the dimensionless number suitably also Understand the basic concepts related to laminar and turbulent flow
BECVE503 P	Fluid Mechanics-I (Practical)
C503.1	Determine the discharge of Venturimeter , Orifice meter, Rectangular Notch, Triangular Notch
C503.2	Determine the coefficient of velocity and the coefficient of contraction of the orifice and mouth piece.
C503.3	Knowledge of laminar flow, turbulent flow & Reynolds number

BECVE504T Geotechnical Engineering -II	
C504.1	Use the knowledge of different soil exploration techniques to ascertain the properties of soil
C504.2	Analyze the stability of natural slopes, safety & sustainability of the slopes ,design of retaining structures, reinforced earth walls, etc.
C504.3	Implement the Practices of Ground Improvement Techniques.
C504.4	Design the shallow& deep foundation.
BECVE505T Hydrology & Water Resources	
505.1	Use of knowledge of basics of hydrology in calculating infiltration, evaporation, total runoff.
505.2	Use the techniques of the Hydrographs to forecast flood discharge at various durations.
505.3	Apply the Statistical techniques to analyze the flood occurrence & frequency.
505.4	Use the knowledge pertaining to the flood to plan flood routine & emergency plans
505.5	Apply the knowledge of geo-hydrology terms in planning, assessing & computation of ground water potential and its assessment using various techniques.
505.6	Take-up planning of water resources mini project.
BECVE506P Communicative English & Technical Writing	
C506.1	Use functional grammar
C506.2	Write at work, draft reports and letters
C506.3	To understand the planning and procedure of carrying out research work
C506.4	Dexterous in presentation skills and participate in GD
BECVE601T Steel Structures	
C601.1	Apply the knowledge of structural properties in assessing its strength for the construction purpose.
C601.2	Analyze the steel structural components by using various techniques.
C601.3	Make use of understanding and knowledge of analysis in structural planning and design of various buildings components.
C601.4	Use computer techniques to analyze the steel components of a building
BECVE601P Steel Structures (Practical)	
C601.1	Able to calculate axially loaded member by tensions and compression members.
C601.2	Design of connection: Beam to beam, beam to column.
C601.3	Design of column & its components.
BECVE602T/5CE01T Surveying-II	
C602.1	Carry forward the concepts of basic surveying techniques
C602.2	Operate various survey instruments effectively with precision
C602.3	Use the different techniques in various surveying problems

C602.4	Apply the concepts of modern surveying techniques & instrumentation.
C602.5	Execute project using different surveying techniques
C602.6	Understand and make use of various photography surveys in drawing appropriate conclusion.
BECVE602P/5CE01P Surveying-II (Practical)	
C602.1	Learn the importance of errors and precisions during the survey work.
C602.2	Handle & record measurement on instruments used in various types of surveying.
C602.3	Carry out detailed survey of an area using appropriate technique and draw topological features on the sheet.
BECVE603T Fluid Mechanics -II	
C603.1	Understand the concepts related to boundary layer theory and determination of drag and lift forces.
C603.2	Apply the knowledge of theories and equations of pipe flow in analyzing and designing the pipe network systems and its components including water hammer pressures.
C603.3	Use the concepts of uniform and critical flow through open channels including design of efficient channel sections.
C603.4	Understand the different techniques of dimensional analysis and its use in model testing.
C603.5	Understand and apply basic knowledge related to Turbines & Pumps in Water Resources planning.
C603.6	Make use of specific energy concepts in the analysis of open channel flow.
BECVE603P Fluid Mechanics -II (Practical)	
C603.1	Perform experiments to know and verify basic terminology related to fluid mechanics.
C603.2	Perform experiment to find out various hydraulic parameters for an open channel flow.
C603.3	Perform experiment on different turbines and pumps to understand its working and operational terms related to them.
BECVE604P Building Design and Drawing (Practical)	
C604.1	Understand building bye laws & building code
C604.2	Apply the principles of building planning and design.
C604.3	To draw submission/working drawing using suitable software.
C604.4	Make use of knowledge to give layout on the field as per the plan..
C604.5	Draw simple perspective drawings.
C604.6	Understand the drawings and detailing of Building services
BECVE605T/5CE02T Environmental Engineering-II	
C605.1	Use the technical terms related to water & its quality, sewage, sewer, storm water ,etc. in its hydraulic Design, construction, testing and maintenance.

C605.2	Understand and characterize the waste water sample in terms of its physical & chemical characteristics.
C605.3	Take-up the work functional planning, layout and design of components of Water Treatment and Sewage Treatment Plants.
C605.4	Prepare the plan for rural sanitation provisions, perform functional design of septic tank.
C605.5	Analyze the industrial waste water and understand the process of its treatment.
C605.6	Make use of knowledge and effect of air pollution, solid waste in planning for its prevention and control.
BECVE606P Site Visit & Mini Project (Practical)	
C606.1	Get an idea of various project details such as contracts, layout, planning, drawing, estimates, Arbitration provision, licensee & licensor ,architects, structural designer, etc
C606.2	Get an idea of various construction equipment, manpower & techniques used at site, techniques of batching, mixing, transportation and placement of different construction materials.
C606.3	Get an overview on safety measures, basic amenities to provide, inventory control.
C606.4	Write a legible, correct and technically sound report after the visit.
C606.5	Ascertain the provisions and execution as per the working drawing.
SEVENTH & EIGHTH SEMESTER	
BECVE701T Advanced Concrete Structures	
After studying this subject, the students will be able to	
C701.1	Understand the behavior and failure modes different concrete members
C701.2	Analyze and apply the results in designing various concrete member of structure.
C701.3	Apply the knowledge & skills in practical problems
C701.4	Understand the relevant software and use the same in analysis & design of concrete members.
BECVE701P Advanced Concrete Structures (Practical)	
C701.1	Analyze and design various concrete member of structure.
C701.2	Understand the relevant software and use the same in analysis & design of concrete members.
C701.3	Can write a report of visit to a site of concrete construction
BECVE702T/8CE02T Estimating and Costing	
C702.1	Prepare the preliminary estimate for administrative approval & technical sanction for a civil engineering project.
C702.2	Understand and write the specification of the works to be undertaken, prepare the tender & contract documents and make use of knowledge of different contract submission & opening in awarding the work to the contractor.

C702.3	Use & execute the concept of SD, EMD, MAS, Running Bill, Final Bill during the entire project
C702.4	Prepare the bar bending schedule & also be able to find the quantity of steel
C702.5	Use the technique of Rate analysis in estimating the exact cost of material & manpower and hence the entire project.& finding the rate per unit.
C702.6	Prepare the estimate the bill of quantities using different techniques of preliminary & detailed estimation of buildings & roads
BECVE702P/8CE02P Estimating and Costing (Practical)	
C702.1	Prepare preliminary estimates and detailed estimate of the each item of the project using appropriate method and perform the rate analysis of materials and manpower to obtain exact cost of the project.
C702.2	Use the knowledge in drafting the Specification, tender notice, contract proposal, etc and prepare the bill of quantities for the project.
C702.3	Understand the term depreciation and methods of calculating it and make use of it in valuation of the building or commodity.
BECVE703T Elective-I Air Pollution And Solid Waste Management	
C703.1	Understand different aspects of air pollutants, its sources and effects on man and materials
C703.2	Acquire the knowledge of appropriate methods and equipments available to reduce the impact of air pollution on environment.
C703.3	Understand the physical and chemical characteristics of the solid waste depending upon its sources of generation. the generation of solid waste problems arriving in handling large amount of solid waste generated, its collection and transportation, processing and will be able to design safe collection and disposal methods.
C703.4	Achieve the knowledge of classifying, collection, transportation of solid waste.
C703.5	Understand the different methods of processing of solid waste and control of its by-products.
C703.6	Achieve the knowledge of disposal techniques of solid waste.
BECVE704T/5CE06T Construction Management & Law/Project Management	
C704.1	Demonstrate the understanding of various types of projects, modern construction techniques and will exhibit the knowledge in construction planning, scheduling and various controls.
C704.2	Exhibit the understanding in Network Analysis using CPM & PERT
C704.3	Achieve the knowledge regarding planning, allocation, utilization, operation and costing of the resources, manpower and tools & plants for any construction projects.
C704.4	Implement the quality control aspects in planning & management, modern trends project management, application of information system in management of construction projects, safety provisions and equipments.
C704.5	Understand the legal aspects in construction projects through the understanding of various laws pertaining to civil engineering and architectural planning & sanctioning, labor & organizational welfare measure, provisions of arbitration and litigations.
C704.6	Understand the provisions of different Acts pertaining to The Environment, Forest, Water & Air Pollution for any construction activity to be undertaken.
BECVE705T/7CE03T Transportation Engineering - II	

C705.1	Understand the functions of various elements of railways, airports and tunnels.
C705.2	Plan and design various elements of railways, airports and tunnels.
C705.3	Acquire knowledge of principles of traffic control in railways, airports and tunnels.
C705.4	Understand requirement, design and construction of permanent way, runway, taxiways, & tunnels.
C705.5	Achieve the understanding in the maintenance of various elements of railways, airports and tunnels.
C705.6	Know the modern tools and techniques used in construction and the maintenance of various elements of railways, airports and tunnels.
BECVE706P Industrial Case Study and Project Seminar	
Industrial Case Study	
C706.1	Get exposed to the Civil Engineering Works in the industry and learn the practical aspects of the same.
C706.2	Write the detailed report on understanding achieved related to project planning, design, construction, and management.
C706.3	Can correlate the academic and industry based on understanding achieved during the exposure in the industry.
Project & Seminar	
C706.4	Understand the importance and role of literature available and can draw appropriate conclusion after reviewing the literature.
C706.5	Formulate the Aim and Objective of the project based on the literature survey
C706.6	Write the report and prepare the presentation and deliver the content of the work done in the project.
BECVE801T Irrigation Engineering	
C801.1	Understand the importance and scope of irrigation engineering
C801.2	Understand the methods and efficiencies of irrigation, crop water requirement.
C801.3	Acquire the knowledge in planning, design and operation of storage reservoir and make use of it in the practical situation.
C801.4	Understand the basic profile of dams and use the knowledge in checking stability of various types of dams
C801.5	Know the theories of Canal design and apply the concept to design lined and unlined canals and detailed out the cross sections.
C801.6	Solve water logging problems and provide the appropriate solution to it.
BECVE802T Elective-II Pavement Analysis And Design	
C802.1	Understand the characteristics & structural action of different types of pavement.
C802.2	Understand and evaluate the various parameters important for the design of flexible and rigid pavement.
C802.3	Analyze and design Flexible pavement and under different loading conditions using various techniques.
C802.4	Analyze and design Rigid pavement and under different loading conditions using various techniques.
C802.5	Propose a framework for pavement management system.
C802.6	Acquire the knowledge of pavement testing and evaluation and make use of it in strengthening, repairs, maintenance and rehabilitation of pavements.

BECVE803T Elective - III Water And Waste Water Treatment	
C803.1	Understand the composition of typical municipal solid wastes, their sources, collection, treatment and disposal.
C803.2	Attain the ability to use the techniques, skills, and modern engineering tools necessary for environmental engineering practices.
C803.3	Understand the stages and process of waste water treatment
C803.4	Understand the use and working of various units of water treatment plant.
C803.5	Make use of the knowledge related to WTP in the design of different units of water & waste water treatment plant.
C803.6	Acquire the knowledge of recent development in water & waste water treatment .
BECVE803P Elective - III Water And Waste Water Treatment	
C803.1	Know various water and waste water parameter.
C803.2	Perform various tests on different samples of water and waste water to ascertain the presence of impurities so as to evaluate the quality of water.
C803.3	Make use of the knowledge to Design individual units of a WTP.
BECVE804T Construction Economics and Finances	
C804.1	Acquaint with various economic and financial aspects of construction industry
C804.2	Understand the tools and techniques of economic analysis for improving their decision making skills.
C804.3	Understand the knowledge of economics and finance with special reference to construction
COMPUTER ENGINEERING	
Third Semester	
BECT202T Program Logic Design in ‘C’	
CO202.1	Understand concept of arrays, string handling concept of handling variable data types using structures building functions.
CO202.2	Understand concept of file, file handling programs study various file handling functions.
CO202.3	Able to build programs using pointer. Concept of memory allocation & using various DMA functions
CO202.4	To build graphic functions & Drawing images on the console by using various graphic functions
CO202.5	To acquire basic knowledge of mathematical modeling & model of computation
CO202.6	Design C language program for read and write file operations
BECT202P Program Logic Design in ‘C’ -Lab	
CO202.1	Get a fundamental understanding of Program Logic design in "C ".
CO202.2	Apply concept of Arrays and Structures.
CO202.3	Apply the concept of Files and pointers.
CO202.4	Design using C Graphics.
BECT203T Digital Circuits & Microprocessor	
CO203.1	To acquire basic knowledge about digital electronics and solving problems related to number systems and Boolean algebra.

CO203.2	To identify, analyze and design of various combinational circuits.
CO203.3	To be able to design various synchronous and asynchronous sequential circuits.
CO203.4	To acquire basic knowledge about Microprocessors and its need.
CO203.5	To be able to understand the internal structure and interfacing of different peripheral devices with 8085 Microprocessor.
CO203.6	To be able to understand the various instructions and programming using 8085 microprocessor.
BECT203P Digital Circuits & Microprocessor lab	
CO203.1	Understand the fundamental of basic logic gates and their use in combinational and sequential circuits.
CO203.2	Understand the use of digital components as a switching elements.
CO203.3	Be able to generate basic arithmetic and logic circuits required in microcomputer system.
CO203.4	Develop assembly language programmes.
BECT204T Social and Ethical aspects of IT	
CO204.1	Get fundamental Understanding and the role of ethics and its uses for IT user IT professionals, Business world.
CO204.2	Understand the essential issues related to information security, & to take precautions and use techniques and tools to defend against computer crimes.
CO204.3	Learn the key ethical, legal and social issues of information technology and to interpret and comply with ethical principles, laws, regulations, and institutional policies.
CO204.4	Apply creative thinking to solve basic technology problems in a business setting and Cultivate the critical and analytical thinking skills necessary to successfully manage ethical decisions and dilemmas in management.
CO204.5	Understand the core IT concepts of current and emerging technologies and learn to apply appropriate technologies to a tasks.
CO204.6	Ability to communicate, creates, and collaborate effectively using state-of-the-art information technologies in multiple modalities.
BECSE205T Computer Architecture & Organization	
CO205.1	To Describe the Basic Structure of Computer Hardware and Software, Bus Structures, Memory Locations and Addresses and Machine Programming Addressing.
CO205.2	To study Instruction Sets High Level Language consideration, IBM-370 and execution of Instructions.
CO205.3	It aims to study Microinstructions, micro program sequencing, perfecting microinstruction and Emulation.
CO205.4	How to represent number system, and to perform addition, subtraction, multiplication and division on signed and unsigned number.
CO205.5	To study Memories like Semiconductor RAM Memories, Semiconductor ROM Memories, Multiple Module Memories, Cache Memories, virtual Memories and Memory Management.
CO205.6	Identify the different architectural and organizational design issues that can affect

	the performance of a computer such as instruction set design, pipelining, RISC architecture and superscalar architecture.
BECSE201T	Mathematics- III
CO201.1	Student can identify Laplace transforms & inverse Laplace transforms of various types of function, its properties and apply it to solve differential equation and are able to use in engineering Problems.
CO201.2	Students are competent to work out the Fourier series representation of a periodic function in both exponential and sine-cosine forms and to solve partial differential equation and use Fourier transforms and its inverse in practical applications.
CO201.3	Student are capable to find the Z- Transform, inverse Z- Transforms of a sequence, identify its region of convergence and develop an ability to solve problems in various branches of Engineering.
CO201.4	Student understand analytic function of a complex variable and are able to apply Cauchy integral theorem and residue theorem to solve contour integrations.
CO201.5	Student can determine eigen values and eigenvectors and
CO201.6	the solution of linear differential equation using matrix method and student apply concept of matrices and its application for solving engineering problems One can obtain random variables corresponding to random experiments; Specify probability density and cumulative distribution functions for both discrete and continuous random variables. Calculate the distributions for functions of random variables.
BECT206P	Computer Workshop Lab
CO206.1	Get a fundamental understanding of Hyper Text Markup Language and apply the concepts of basic H.T.M.L code structure.
CO206.2	Designing the concepts for creation of H.T.M.L page using various tags.
CO206.3	Validating the data using Java script.
CO206.4	Implementation of list tag, marquee tag, href tag, frame tag, form tag, and also designing of small website.
CO206.5	Student should come to know some VBScript Concept that will be useful for development of website.
CO206.6	Able to know about Linux Operating System.
BECSE207T	Environmental Engineering
CO207.1	Students will understand the importance and become aware of the upcoming environmental issues
CO207.2	Students will understand the importance of natural resources and can work for their conservation
CO207.3	Students will gain knowledge about the various ecosystems existing in nature and their importance for conservation of nature
CO207.4	Student will learn about the biodiversity at local, national and global levels and the importance of wild life conservation
CO207.5	Students will gain knowledge about different types of environmental pollution, their effects and control of pollution for the benefit of mankind
CO207.6	Students will learn the social issues through various Acts under the constitutional provisions

FOURTH SEMESTER

BECT208T Discrete mathematics & graph Theory	
CO208.1	Students will be able to describe several areas of mathematics beyond calculus, express their interest in mathematics, understand why mathematical thinking is valuable in daily life and solve equations and inequalities both algebraically and graphically.
CO208.2	Students will be able to compute the Cartesian product of sets, find the domain, co-domain and range of a relation. Draw the graphs of various types of relations and perform the algebraic operations on real functions
CO208.3	The study of group theory aims to introduce students to some more sophisticated concepts, results as an essential part of general mathematical culture and as a basis for further study of more advanced mathematics.
CO208.4	To know concepts from the theory of rings such as zero divisor, division rings and fields which form the essentials of the mathematics? Lattice is an introduction to partially ordered sets. A knowledge of Boolean algebra serves two main purposes: firstly, to describe and define the function of a logic circuit; and secondly by simplifying the Boolean expression defining a particular circuit, one can simplify or reduce the associated hardware.
CO208.5	Students will be able to model and solve real-world problems using graphs and trees, both quantitatively and qualitatively.
CO208.6	Students will be able to apply diverse counting strategies to solve varied problems involving strings, combinations, distributions, partitions and analyze combinatorial, algebraic, inductive, formal proofs of combinatoric identities.
BECT209T Data Structures & Program Design	
CO209.1	Apply algorithm analysis techniques to evaluate the performance of an algorithm and to compare data structures. Also Implement and know when to apply standard algorithms for the creation, insertion, deletion, searching, and sorting of each data structure
CO209.2	Implement the basic and advance concepts of stacks and queues through programming. Describe the concept of recursion, and its implementation using a stack.
CO209.3	Apply the concepts of Linked list on various problems and implement it.
CO209.4	Understand and apply fundamental algorithmic problems including Tree traversals, height balanced, weight balanced and AVL trees.
CO209.5	Implement various searching techniques on graphs and shortest paths algorithms.
CO209.6	Design and implement concepts of files including hash tables and collision handling techniques.
BECT209P Data Structures & Program Design Lab	
CO209P.1	Student will be able to handle operations like searching, insertion, deletion, traversing mechanism etc. on various data structures.
CO209P.2	Students will be able to use linear and non-linear data structures like stacks, queues, linked list etc.
CO209P.3	Student will be able to choose appropriate data structure as applied to specified problem definition.

CO209P.4	Students will be able to use algorithmic foundations for solving problems and programming.
BECT210T Advance Microprocessor and Interfacing	
CO210.1	Students should get basic knowledge of the architecture and operation of microprocessors (8085, 8086 and 80386) and microcontroller (8051). 2. Students should be able to design and implement microprocessor-based systems.
CO210.2	Understanding of assembly language programming techniques.
CO210.3	Analyze the reason behind the cost of executing instructions in terms of time and space in simple programs
CO210.4	Understanding of interfacing and I/O techniques used in microprocessors and microcontrollers.
CO210.5	To understand techniques for faster execution of instructions and improve speed of operation and performance of microprocessors.
CO210.6	To understand RISC and CISC based microprocessors. To understand concept of multi core processors
BECT210P Advance Microprocessor and Interfacing	
CO210.1	Apply the programming techniques in designing simple assembly language programs for solving simple problems by using instruction sets of microprocessor
CO210.2	Students should be able to design and implement microprocessor-based systems.
CO210.3	Students should be able to use an Integrated Development Environment (IDE) as a modern software tool for embedded system development
BECT211T Theory of Computation	
CO211.1	Apply principles of fundamental and computational mathematics to the field of computer engineering.
CO211.2	Design finite automata to recognize a given regular language.
CO211.3	Transform a language into regular expression or finite automata or Transition graph.
CO211.4	Define relationship between regular language and context free Grammar. Building a context free grammar for push down automata
CO211.5	Design turing machine and post machine for a given language
CO211.6	Apply the concept of computability. Be familiar with thinking analytically and intuitively for problem solving situation in related area of theory in computer science
BECT212T Introduction to Main-Frame Languages	
CO212.1	Should be able to understand concept of Web Architecture and TCP/IP Architecture and its Application Services.
CO212.2	Should be able Understanding concept of XML, operation of web server and content recovery.
CO212.3	Should able to Design dynamic and interactive web pages by embedding Java Script CSS, Ajax code in HTML. Use Java Script to validate user input
CO212.4	Should able to understanding concept of internet Telephony, virtual reality and firewall design issues.
BECT213P Computer Workshop – 2 Lab	

CO213.1	Should be able to understand concept linuxOS.
CO213.2	Should be able to execute linux command.
CO213.3	Should be able to design shell script program.
CO213.4	Design shell script program using loop control and decision control statement
FIFTH SEMESTER	
BECT305T Data Communication	
CO305.1	Recall fundamental concepts of Data Communication.
CO305.2	Analyze the signal conversion methodologies.
CO305.3	Illustrate communication media, frequency allocation & propagation of radio waves.
CO305.4	Elaborate spread spectrum alongwith its services and various multiplexing schemes.
CO305.5	Compare and contrast various Digitizing & Compression of multimedia
CO305.6	Analyze various encoding & compression schemes.
BECT301T Object oriented modeling	
CO301.1	To learn the concept of Object Oriented Software Development Process.
CO301.2	TO understand the basic Structural modeling and create the class and object diagram, Collaboration diagram.
CO301.3	To Understand the basic Behavioral Modeling by using Use case diagram, Activity Diagram, State diagram, Time diagram , Dataflow diagram, Sequence diagram, ER Diagram
CO301.4	To learn the concept of Architectural Modeling which include deployment diagram, Component diagram.
CO301.5	To learn about Unified Process with use case driven, capturing use case, iterative and incremental, learn about implementation to realize the use cases, testing use cases.
CO301.6	To understand the Architecture-Centric Process, steps of architecture and an architecture description.
BECT301P Object Oriented Modeling-Lab	
CO301.1	Be able to understand the difference between object oriented programming and procedural oriented language and data types in C++.
CO301.2	To prepare object-oriented design for small/medium scale problems.
CO301.3	To understand the role of inheritance, polymorphism, dynamic binding and generic structures in building reusable code.
BECT302T Database Management System	
CO302.1	Explore the various models of DBMS and levels in the architecture of DBMS.
CO302.2	Relate the problems in day to day life by implementing the Entity relationship model and understanding queries in terms of relational algebra.
CO302.3	Understand complex queries using PL/SQL also techniques to improve performance of database.
CO302.4	Understand the various database optimization techniques to serve the industry in more efficient way.

CO302.5	Face and resolve the crash in database system.
CO302.6	Apply various database recovery techniques also understands various databases.
BECT302P Database Management System-Lab	
CO302.1	Learning a systematic way of describing and defining a business process of Entity relationship model and understands various components of it.
CO302.2	Implementation of various queries in sql.
CO302.3	Understand and execute complex queries using PL/SQL.
BECT303T Operating System	
CO303.1	Understand the Functions of Operating System, Types of Operating System, Process concept, Process State. Work on WINDOWS Server & LINUX.
CO303.2	Practically implementation of scheduling algorithm.
CO303.3	Understand the concept of Deadlock Prevention, Avoidance, Detection and Recovery. Context switch, Threads Overview, Multithreading Models, Threading issues.
CO303.4	Analyze how to manage the memory by using Paging and Segmentation and analysis of virtual memory management.
CO303.5	Practical implantation of file system I/O system, Disk Space management, Kernel on LINUX based System.
CO303.6	Understand the concept of Disk Management, RAID Structure, and Swap-Space Management.
BECT303P Operating system-Lab	
CO303.1	Practically implementation of Process concept, Scheduling algorithm.
CO303.2	Program to implement demand paging using FIFO method, string using LRU method.
CO303.3	Implementation virtual memory management, producer and consumer processes using semaphore.
CO303.4	MVT Multiprogramming with a Variable number of Tasks memory management techniques. MFT (Multiprogramming with a Fixed number of Tasks) memory management techniques.
BECT304T Design & Analysis of Algorithm	
CO304.1	Define the basic concept of algorithm and Analyze the asymptotic performance of algorithms.
CO304.2	Derive and solve recurrences describing the performance of divide and Conquer algorithms.
CO304.3	Find optimal solution by applying greedy approach
CO304.4	Find optimal solution by applying dynamic approach, backtracking.
CO304.5	Explain the major graph algorithms and their analyses and Differentiate polynomial and non-polynomial problems
CO304.6	Can define the classes P and NP and explain the significance of NP-completeness
BECT304P Design & Analysis of Algorithm-Lab	
CO304.1	Ability to design the algorithm using divide and conquer method

CO304.2	Ability to Apply the concept of Greedy Approach
CO304.3	Ability to Apply the concept of Dynamic programming
CO304.4	Ability to apply the concept of backtracking
SIXTH SEMESTER	
BECT306T Computer Graphics	
CO306.1	Understand the basic concepts and terminology used in computer Graphics.
CO306.2	Understand the different transformations like Scaling, rotation, translation, rotation about arbitrary point, reflections, shearing.
CO306.3	To learn about polygon filling techniques. Discuss various algorithms for scan conversion and filling of basic objects and their comparative analysis.
CO306.4	Use of geometric transformations on graphics objects and their application in composite form and concept of viewport.
CO306.5	Understand about the concept segmentation and windowing and clipping techniques, and the different methods used for Curves and surfaces.
CO306.6	Understand and use the different color models , color applications and Animation techniques
BECT306P Computer Graphics-Lab	
CO306.1	Understand the foundations of computer graphics and concept of geometric ,mathematical and algorithmic concepts.
CO306.2	Write program functions to implement graphics primitives and create interactive graphics applications in C++ using one or more graphics application.
CO306.3	Develop design drawing that demonstrate computer graphics and design skills.
CO306.4	Understand the comprehension of windows,clipping and view-ports object representation in relation to images displayed on screen.
BECT309T Embedded System Design	
CO309.1	Ability to understand the basic concept of embedded systems and design cycle of embedded system design.
CO309.2	Acquire knowledge about communication synchronization of processes.
CO309.3	Student should understand about RTOS(Real Time Operating System)
CO309.4	Ability to understand working of microcontrollers and basic assembly language programming concepts.
CO309.5	Understand basic of communication, serial communication and how external devices communicate with hardware.
CO309.6	Acquire knowledge about interfacing of 8051with other devices
BECT310T Functional English	
CO310.1	Students have better reading comprehension, pronunciation, and functional English grammar.
CO310.2	Students are able to write letters and resumes
CO310.3	Students are able to organize their thoughts for Effective presentation and writing.
CO310.4	Students are able to learn skills to present themselves well in aninterview, and handle a Group Discussion.

BECT308T Software Engg. & Project Management	
CO308.1	Knowledge of software engineering methods, practices, process models and application.
CO308.2	Knowledge of software engineering Practices and Principles for various stages.
CO308.3	To learn various Modeling Approaches and Design Goals. Further to understand how to map information into various models.
CO308.4	To learn software testing methods and types, And to understand debugging concept with various testing methods.
CO308.5	To understand software quality metrics, Source code metrics, Testing and Maintenance Project metric and fundamentals.
CO308.6	To understand project management, and to know software risks and principles of quality management, further the concept of reengineering and reverse engineering
BECT308P Software Engg. & Project Management	
CO308.1	Learn the concept of requirement gathering & to learn the development of use case model.
CO308.2	Understanding the object creation and the interaction between various objects & their collaboration.
CO308.3	Understanding various states of objects & different component views.
CO308.4	Learning the development of various UML models & understanding complete design phase
BECT307T Computer Networks	
CO307.1	Develop a fundamental understanding of network design principles and performance metrics.
CO307.2	Understand the data link-layer concepts, protocols, and services and basic concepts of wired and wireless networks.
CO307.3	Distinguish packet switching and circuit switching techniques.
CO307.4	Understand different network interfaces and routing techniques for IP based networking infrastructure.
CO307.5	Develop mechanisms for effective network management, congestion control and congestion avoidance in the internet network.
CO307.6	Apply the knowledge earned into various application level services like email, www etc.
BECT307P Computer Networks-Lab	
CO307.1	Simulate and then configure different types of networks.
CO307.2	Implement error correction algorithm & framing.
CO307.3	Implement error detection algorithm & sliding window protocols.
CO307.4	Implement networking concepts like server, client & addressing mechanism with the help of language like java & routing algorithms & application layer protocols
BECT311P Mini Project	
CO311.1	Acquire practical knowledge within the chosen area of technology for project development
CO311.2	Identify, analyze, formulate and handle programming projects with a comprehensive

	and systematic approach
CO311.3	Contribute as an individual or in a team in development of technical projects
CO311.4	Develop effective communication skills for presentation of project related activities
CO311.5	Prepare a documentation on developed project
CO311.6	Understand the IEEE paper Format.
SEVENTH SEMESTER	
BECT401T Compiler	
CO401.1	Find out the basic concepts and application of Compiler Design, Students will get the concepts of the actual roles of the lexical analyzer
CO401.2	Students will get the concepts of different Parsing techniques and Construction of syntax trees
CO401.3	Students will get the concepts of Intermediate code generation, Code optimization and Code generations
CO401.4	Apply their basic knowledge of Data Structure to design Symbol Table
CO401.5	Recognize various Code optimization Techniques and Error Recovery
CO401.6	Students will get the concepts of Run time Environments and Type checking
BECT401P Compiler-Lab	
CO401.1	Should be able to understand Flex lexical analyzer.
CO401.2	Design flex program for recognize token.
CO401.3	Implement flex program for infix and postfix using Yacc
CO401.4	Design flex program for check syntax "for" and "switch" statement.
BECT402T Artificial Intelligence	
CO402.1	Understand the problem spaces, problem solving and learning methods in artificial intelligence. Apply basic artificial intelligence algorithms to solve problems.
CO402.2	Understand the fundamentals of knowledge representation (logic-based, frame-based, semantic nets), inference and theorem proving .Develop skill to create small to medium sized programs Prolog, Python, Matlab etc. .
CO402.3	Analyze how uncertainty is being tackled in the knowledge representation and reasoning process, in particular, techniques based on probability theory and possibility theory (fuzzy logic).
CO402.4	The outcomes of this course affect the ability of the students to design, build and implement expert system and to explain most of the knowledge-based systems used in AI to provide solutions to real-world problems.
CO402.5	Ability to apply knowledge representation, reasoning, and machine learning techniques to real-world problems Master the skills and techniques in Natural Language Processing.
CO402.6	Able to explain the function of artificial neural networks, neural learning, Knowledge representation in ANN. To understand the fundamental theory and concepts of neural networks, neuro-modeling, several neural network paradigms and its applications and Genetic Algorithm.

BECT402P Artificial Intelligence-Lab	
CO402.1	Apply the concept of backtracking
CO402.2	Apply the concept of Dynamic programming
CO402.3	Master the skills and techniques in Natural Language Processing.
CO402.4	Be able to design a simple agent system and associated ontology and justify the design
BECT403T Elective- I Advance Database system	
CO403.1	Student will understand the issues and challenges faced while designing distributed database systems & have a broad picture of distributed transaction management, concurrency Control, distributed DBMS reliability and replication techniques.
CO403.2	Understand the fundamental principles and architecture of parallel database systems.
CO403.3	Design and implement an Object-based database for a given problem according to well known design principles that balances data retrieval performance with data consistency
CO403.4	Understand the use of XML in web application development
CO403.5	Get the fundamental concepts, benefits and problem areas associated with data warehousing
CO403.6	Analysis of essential DBMS concept such as Statistical Database security PL/SQL Security and integrity threats
BECT404T Elective-II Architecture of web application	
CO404.1	To understand Basic web Architecture, Web development Framework, Protocol position in TCP/IP stack.
CO404.2	To understand concept of HTTP, URL, SGML and CSS with their common syntax & key-terms
CO404.3	To understand XML, XHTML, XSL, Dynamic & Static Contents .Further to understand server Security concept.
CO404.4	To know the process of HTTP Request, Processing HTTP Responses, Cookie coordination, & different Mail transfer Protocol.
CO404.5	To understand the Concepts of JavaScript, AJAX, & clickable maps.
CO404.6	To understand Advanced concepts like Internet Telephoning, Virtual reality over the web, Intranet and Extranet, Firewall Design Issues etc.
BECT405P Project & Seminar	
CO405.1	Deliver effective presentations in contexts that may require power point, extemporaneous or impromptu oral presentations.
CO405.2	Demonstrate both oral and written work in a grammatically accurate and rhetorically engaging style.
CO405.3	Conceive, arrange, and articulate ideas logically and clearly.
CO405.4	Design and develop Technical reports.
EIGHTH SEMESTER	
BECT406T Data Warehousing & Mining	
CO406.1	Explore architecture of Data warehouse and different OLAP operations.

CO406.2	Understand data mining functionalities and major issues and challenges in data mining.
CO406.3	Recognize various classification methods and clustering techniques to implement the same in real world in efficient way.
CO406.4	Understand the various frequent patterns and association rules with the help of Apriori and FP growth algorithms.
CO406.5	Realize importance of web data mining, temporal and spatial data mining.
CO406.6	Understand Big data analytics, different technologies and tools. And significance of Hadoop from industry point of view.
BECT406P Data Warehousing & Mining-Lab	
CO406.1	Get a knowledge of different data mining tools.
CO406.2	Demonstrate WEKA Explorer, Mining techniques and Attribute Relation File
CO406.3	Implement clustering, classification, association finding, feature selection and visualisation techniques on real world data
CO406.4	Determine whether a real world problem has a data mining solution
BECT407T Cyber & Information security	
CO407.1	To understand design issues in Information Security and security threats, services and mechanisms to counter them.
CO407.2	Classify computer and security threats and develop a security model, to prevent, detect and recover from attacks.
CO407.3	Design and analyze authentication protocols for two party communications and analyze various key agreement algorithms to identify their weaknesses.
CO407.4	Analysis of ethical issues related to the misuse of computer security, Message Authentication and key management
CO407.5	To be familiar with advanced security issues and technologies (such as DDoS attack detection and containment, and anonymous communications)
CO407.6	Analyze various Software Vulnerability and various security issues related to the Electronic transaction.
BECT407P Cyber & Information security-Lab	
CO407.1	Get a fundamental understanding of Cyber and Information Security and applying the concept of Information Security.
CO407.2	Designing the concepts of conventional Encryption.
CO407.3	Analysis of various Algorithms and ethical and professional issues.
CO407.4	Implementation of protection and security mechanisms.
BECT408T Elective-III Parallel Computing	
CO408.1	Recall fundamental concepts of parallelism.
CO408.2	Analyze the parallel models and Dependencies for parallelism.
CO408.3	Illustrate multithreaded and message passing parallel algorithms.
CO408.4	Learn parallel programming languages and implement MPI Programs.
CO408.5	Compare and contrast various parallel algorithms using shared memory and MPI.

CO408.6	Analyze parallel paradigms and standard laws
BECT409T Elective-IV Cloud Computing	
CO409.1	To provide students a sound foundation of the cloud computing so that they are able to start using and adopting Cloud Computing services and tools in their real life scenarios.
CO409.2	The student will learn about the cloud environment, building software systems and components that scale to millions of users in modern internet, cloud concepts capabilities across the various cloud service models including IaaS, PaaS, SaaS, and developing cloud based software applications on top of cloud platforms.
CO409.3	Gain a clear understanding of the concepts that underlie big data analysis systems along with design and implementation issues using Hadoop.
CO409.4	Understanding the key dimensions of the challenge of Cloud Computing like securities.
CO409.5	To enable students exploring some important cloud computing driven commercial systems such as Microsoft Azure and other businesses cloud applications.
ELECTRONICS ENGINEERING	
III SEMESTER	
Applied Mathematics III	
CO301.1	Student can identify Laplace transforms & inverse Laplace transforms of various types of function, its properties and apply it to solve differential equation and are able to use in engineering Problems.
CO301.2	Students are competent to work out the <u>Fourier series</u> representation of a periodic function in both exponential and sine-cosine forms and to solve partial differential equation and use <u>Fourier transforms</u> and its inverse in practical applications.
CO301.3	Student can find extreme values of functional using Euler's eq. and also apply knowledge to solve Isoperimetric problems and boundary value problems.
CO301.4	Student understand analytic function of a complex variable and are able to apply Cauchy integral theorem and residue theorem to solve contour integrations.
CO301.5	Students are able to solve Lagrange's form and linear Homogeneous equation of Higher order with constant coefficient. They can apply method of separation of variable for solving P.D.E. in various engineering problems and also in Laplace transforms.
CO301.6	Student can determine eigen values and eigenvectors and the solution of linear differential equation using matrix method and student apply concept of matrices and its application for solving engineering problems.
Electronic Devices & Circuits	
CO302.1	To explain the details of semi-conductor components Diode and its application.
CO302.2	To understand the construction and biasing of transistors.
CO302.3	To analyze transistor in AC and its use as a negative feedback amplifier.
CO302.4	To use Transistor as a Oscillator and Multivibrator.
CO302.5	To use Transistor as a various types of Power amplifier.
CO302.6	To analyze and design amplifier circuits employing FET devices.
Electronics Measurement & Instrumentation	
CO303.1	Explain basic concepts & basic principles of measuring instruments definitions of

	static & dynamic characteristics of instruments in measurement
CO303.2	Explain the operation & design of various electronic instruments like PMMC galvanometer ammeter , AC&DC voltmeter for measurement
CO303.3	Explain working of various AC & DC bridges & their applications in the measurement & instrumentation system
CO303.4	Explain the operation of various types transducers for measurement of process temperature level displacement & flow
CO303.5	Explain the operation & working of oscilloscopes & the basic circuit blocks in the design of oscilloscope , dual beam , dual trace oscilloscope & application of CRO in the measurement circuitry & design of various function generators signal generators AF&RF generators
CO303.6	Explain the construction & operation of signal analyzer wave analyzer spectrum analyzer ,signal conditioning system & its necessity , data acquisition system.
Object Oriented Programming and Data Structure	
CO304.1	Be able to implement the concept of object oriented programming in any programming language.
CO304.2	Explain the basic data structures and algorithms for manipulating them.
CO304.3	Implement these data structures and algorithms in the C++ language.
CO304.4	Integrate these data structures and algorithms in larger programs.
CO304.5	Code and test well-structured programs of moderate size using the C++ language.
CO304.6	Apply principles of good program design to the C++ language.
Network Analysis & Synthesis	
CO305.1	Analyze circuit systems using direct application of Kirchhoff's Current and Voltage Laws along with Ohm's Law.
CO305.2	Analyze the circuit using Network simplification theorems.
CO305.3	Analyze the series resonant and parallel resonant circuit.
CO305.4	Design attenuators, filters and understand the basics of transmission lines.
CO305.5	Students will be able to analyze the steady state and transient response of simple electric circuits.
CO305.6	Evaluate two-port network parameters of any network.
Electronic Devices & Circuits	
CO306.1	To plot and study the characteristics of semiconductor devices.
CO306.2	To understand the use of semiconductor devices in different electronic circuits.
CO306.3	To calculate different performance parameters of transistors.
CO306.4	To get the basic concepts of different semiconductor components.
CO306.5	To Understand Functioning of CRO, multi-meter, function generator, power supply, components, bread-board etc.
CO306.6	To understand the application of Transistor as an Amplifier.
Electronics Measurement & Instrumentation	
CO307.1	Identify electronics/ electrical instruments like transducers, bridges, and their use, peculiar errors associated with the instruments and how to minimize such errors.
CO307.2	Explain the industrial and laboratory applications of such instruments, service and maintain such instruments in case of damage or misuse.

CO307.3	The students will understand the basic design techniques of electronic equipment.
CO307.4	Use various laboratory instruments like cathode ray oscilloscope, function generators, wattmeter dismantle and re-couple serviceable parts of some other selected Instruments without damaging them.
CO307.5	Student will be able to use their knowledge about various types of transducers, their applications and how they can be used for design purposes.
CO307.6	Student will be able to measure various physical parameters by using different techniques.
Object Oriented Programming and Data Structure	
CO308.1	Implement the concept of object oriented programming in any programming language.
CO308.2	Explain the basic data structures and algorithms for manipulating them.
CO308.3	Implement these data structures and algorithms in the C++ language.
CO308.4	Integrate these data structures and algorithms in larger programs.
CO308.5	Code and test well-structured programs of moderate size using the C++ language.
CO308.6	Apply principles of good program design to the C++ language.
IV SEMESTER	
BEENE401T Applied Mathematics-IV	
CO401.1	Ability to understand numerical method to solve algebraic, transcendental and system of simultaneous linear equation. Student should able to solve differential equation and Matrix by numerical method.
CO401.2	Student are capable to find the Z- Transform, inverse Z- Transforms of a sequence, identify its region of convergence and develop an ability to solve problems in various branches of Engineering.
CO401.3	Ability to understand solution of differential equation by using series solution.
CO401.4	The course will prepare student to understand Probability Theory and use it for analysis of data. Understand the basic concepts of probability, random variables, probability distribution, and joint probability distribution. Also apply probability theory via Bayes' Rule.
CO401.5	Students will be able to calculate the mean, median, mode, range, and standard deviation for a given data set and also use method of moments and moment generating functions
CO401.6	The student will be able to: 1. Collect and analyze the data statistically. 2. Describe sampling distributions of sample means and sample proportions using the appropriate distribution, e.g. normal, binomial, etc. Also understand the central limit theorem.
BEENE402T Power Devices & Machines	
CO402.1	Understand the basics of different components used in Power Electronics.
CO402.2	Understand the working and characteristics of different power devices along with their applications in Electronic circuits.
CO402.3	Understand the concept of AC-DC converters which are widely used in industries.
CO402.4	Understand the concept of Choppers which are widely used in industries.
CO402.5	Understand the concept of Inverters which are widely used in industries.
CO402.6	Understand the different AC/DC machines and their speed control methods.
BEENE403T Electromagnetic Field	

CO403.1	Understand different coordinate system for mathematical analysis of Electromagnetic Engineering.
CO403.2	Understand the concepts of Electric field, Gauss's law and its applications.
CO403.3	Understand the concepts of Magnetic and Electromagnetic fields required to understand the concepts of Electronic Communication
CO403.4	An in depth understanding of time-varying electromagnetic field as governed by Maxwell's equations.
CO403.5	Understand the use of waveguides for the transmission of electromagnetic waves at higher frequencies.
CO403.6	Understand the basic concepts of Radiation and Elements used for radiation along with the basic terminologies.
BEENE404T Digital Circuits And Fundamental of Microprocessor	
CO404.1	To understand the Combinational Circuits using Logic Gates.
CO404.2	To design Arithmetic and Logical Circuits.
CO404.3	To understand the Sequential Logic Circuits using Flip-Flop.
CO404.4	To Design a Sequential Circuits such as Register, Counter and Sequence Generator.
CO404.5	To understand the Digital Logic Family.
CO404.6	To understand the Basic Fundamentals of 8085 Microprocessor
BEENE405T Signals & Systems	
CO405.1	To Describe the different types of signals and systems used in communication Electronics.
CO405.2	To Apply Fourier series and Fourier transform for the modeling and analysis of different signal in electronic communication and signal processing.
CO405.3	To Apply the concept of probability theory pertaining to communication system.
CO405.4	To Describe the different analog and digital modulation schemes.
CO405.5	To Describe the basics of information theory.
CO405.6	To Describe different coding schemes and able to apply selective coding scheme for the application needed.
BEENE406T Environmental Studies	
CO406.1	Students will understand the importance and become aware of the upcoming environmental issues.
CO406.2	Students will understand the importance of natural resources and can work for their conservation.
CO406.3	Students will gain knowledge about the various ecosystems existing in nature and their importance for conservation of nature.
CO406.4	Student will learn about the biodiversity at local, national and global levels and the importance of wild life conservation.
CO406.5	Students will gain knowledge about different types of environmental pollution, their effects and control of pollution for the benefit of mankind.
CO406.6	Students will learn the social issues through various Acts under the constitutional provisions and gain knowledge about the human rights, value education and the role of Information Technology in environment.
BEENE402P Power Devices & Machines	
CO407.1	Understand the working and nature of characteristics of different power components

	used in Power Devices.
CO407.2	Be able to calculate performance parameters for different devices.
CO407.3	Be able to perform different tests on Transformers for calculating the losses, efficiency, regulation etc.
CO407.4	Be able to perform different tests on motors for calculating the losses, efficiency, regulation etc.
CO407.5	Understand different speed control methods for motors.
CO407.6	Be able to perform no load and Block Rotor test on three Phase Induction Motor.
BEENE404P	Digital Circuits And Fundamental of Microprocessor
CO408.1	To Design combinational and sequential logic circuits from given word statement.
CO408.2	To Implement the developed logic on bread board and verify the truth table obtained.
CO408.3	To Design and analyze digital logic problems.
CO408.4	To Understand the pin configuration and Application of Various IC's
CO408.5	To understand the various Modulo Counters and the Clock Applications in Counters.
CO408.6	To make a basic Programming and implementation on 8085 Microprocessor Kit.
BEENE407P	Software Workshop
CO409.1	Write MATLAB program for any given problem.
CO409.2	Plot various functions using different graphical techniques.
CO409.3	Make mathematical analysis for the given problem.
CO409.4	Get the hands on pSpice Software.
CO409.5	To draw, analyze and plot the electronic circuits using pSpice Software.
CO409.6	Simulate basic electronic circuits.
V SEMESTER	
BEENE501T	Switching Theory & Automata
CO501.1	Demonstrate basic tools for the design of digital circuits and fundamental concepts used in the design of digital systems.
CO501.2	Find out structural properties by using Functional Decomposition & Symmetric functions.
CO501.3	Describe designing aspects of logic circuits using threshold elements.
CO501.4	Design combinational logic circuits, sequential logic circuits.
CO501.5	Describe behavior, capabilities and structure of finite state machines and sequential machines.
CO501.6	Describe diagnosis of faults of switching circuits & methods of improving their reliability.
BEENE502T	Microprocessor & Microcontroller
CO502.1	The student will learn the internal organization of Microprocessor and Microcontroller.
CO502.2	Students will be able to discuss the concept of addressing modes and timing diagram of Microprocessor.
CO502.3	Student will be able to design Interface of 8086 & 8051 with keyboard / Display, ADC/DAC, Stepper motor Interface.
CO502.4	Students will be able to perform the operation based on Interrupts.
CO502.5	Students will be able to send and receive data serially and parallel using serial-

	parallel communication concept.
CO502.6	Students will learn 8087 Numeric coprocessor & its real life application.
BEENE503T Analog Circuits & Design	
CO503.1	Describe basic differential amplifier using transistor and its operation
CO503.2	Design linear op-amp circuits such as voltage follower, summing amplifier, scaling and averaging amplifier, instrumentation amplifier circuits for various practical applications.
CO503.3	Design non-linear op-amp such as comparator, Schmitt trigger and multivibrator circuits for various practical applications using IC 555
CO503.4	Analysis and design of regulated power supply such as emitter follower voltage regulator, series voltage regulator
CO503.5	Analysis and design of sinusoidal oscillators
CO503.6	Analysis and design of filters.
BEENE504T Communication Electronics	
CO504.1	Demonstrate a basic understanding of the term bandwidth and its application in communications.
CO504.2	Describe the Amplitude Modulation & Demodulation process & compute modulation Index.
CO504.3	Describe the angle modulation & Demodulation (FM, PM) process & compute modulation Index.
CO504.4	Describe quantizing and PCM signals, bandwidth and bit rate calculations, Error.
CO504.5	Identify, formulate & solve communication engineering problems.
CO504.6	Describe the fundamentals of AM and FM Receivers.
BEENE505T Industrial Economics & Entrepreneurship Development	
CO505.1	To understand the scope of an industrial economics and entrepreneurship development.
CO505.2	To Understand key areas of business development
CO505.3	To know sources of finance for business development.
CO505.4	To understand project preparation Techniques.
CO505.5	To Understand various methods of taxation and tax benefits
CO505.6	To understand significance of entrepreneurship and economic growth.
BEENE502P Microprocessor & Microcontroller	
CO506.1	The student will learn the internal organization of Microprocessor and Microcontroller.
CO506.2	Students will be able to understand the instruction set and demonstrate the concept of Assembly Languages programming.
CO506.3	Students are able to learn the simulation of the programming on software.
CO506.4	Student will be able to design interface of 8086 & 8051 with keyboard/Display, ADC/DAC, Stepper motor.
CO506.5	Student will be able to design Interface of 8086 peripheral devices like IC-8254, IC-8259
CO506.6	Students will be able to send and receive data serially and parallelly using serial-parallel Communication concept.
BEENE503P Analog Circuits & Design	
CO507.1	Gain a sound understanding of the operation, analysis and design of analog

	electronic circuits and systems
CO507.2	Design linear and nonlinear applications of operational amplifier.
CO507.3	Design the oscillators and other complex circuits using op amp ICs.
CO507.4	Describe gain-bandwidth concept and frequency response of basic amplifiers.
CO507.5	Design analog integrated circuit.
CO507.6	Analyze and design various applications of IC 555.
BEENE504P Communication Electronics	
CO508.1	Demonstrate different modulation & demodulation techniques used in electronic communication system
CO508.2	Demonstration of Pulse Amplitude Modulation (PAM) and plot the waveforms.
CO508.3	Demonstration of Pulse Width modulated signal and study PWM demodulation.
CO508.4	Demonstration of Pulse Position modulated signal and study Pulse Position Demodulation.
CO508.5	Demonstration of Pulse ASK, FSK and PSK techniques.
CO508.6	Simulation of Analog modulation techniques using MATLAB.
VI SEMESTER	
BEENE601T Microwave Engineering	
CO601.1	Understand the use of active and passive microwave devices.
CO601.2	Understand the use of different microwave sources such as Klystrons, magnetron, TWT, BWO etc.
CO601.3	Understand the high frequency transmission lines and measurement of impedance using smith Chart.
CO601.4	Understand the working principle of magnetron as an oscillator and Strapping techniques.
CO601.5	Design the scattering matrix for various microwave components for reciprocal and non-Reciprocal devices.
CO601.6	Understand the various microwave components Gunn Diode, MASERS, Micro-strip lines, etc.
BEENE602T Digital Signal Processing	
CO602.1	Represent discrete-time signals analytically and visualize them in the time domain. Understand the theoretical and practical aspects of sampling and reconstruction. Calculate the outputs of different types of discrete time system in response to discrete time signal inputs.
CO602.2	Describe z-transform for analysis of signal and system.
CO602.3	Describe the discrete Fourier transform (DFT) for analysis of signals and system.
CO602.4	Design and implement digital IIR filter for various applications.
CO602.5	Design and implement digital FIR filter for various applications.
CO602.6	Describe the concept of multi rate signal processing and how to apply it for the wavelet transform.
BEENE603T Control System Engineering	
CO603.1	Analyze various control systems.
CO603.2	Represent the mathematical model of a system.
CO603.3	Determine the response of different order systems for various step inputs.

CO603.4	Analyze the stability of the system using Root locus. Bode plot, Nyquist plot.
CO603.5	Obtain transfer function of systems using signal flow graph.
CO603.6	Apply the state variable approach in design.
BEENE604T Digital Communication	
CO604.1	Describe the digital communication system & Analogy between vectors & Signal spaces.
CO604.2	Explain receiver techniques for detection of a signal in AWGN channel.
CO604.3	Demonstrate the concept of Source coding and decoding techniques.
CO604.4	Describe digital modulation techniques.
CO604.5	Demonstrate the concept of Waveform coding and decoding techniques.
CO604.6	Describe spread spectrum analysis.
BEENE605T Functional English	
CO605.1	To clear the concept of grammar usage and vocabulary.
CO605.2	To prepare student for analytical approach to English language for competitive exams like TOFEL, GRE.
CO605.3	Student learns the correct method for formal correspondence while drafting professional and technical correspondence. They also learn documentation and to convey different message to different kind of audience
CO605.4	To enhance reading ability and speed. To understand the basic concept given in the text.
BEENE601P Microwave Engineering	
CO606.1	To understand the microwave components required in the microwave bench setup.
CO606.2	To understand the characteristics of klystron as an amplifier and draw its mode diagram.
CO606.3	To understand the transmission characteristics of microwave components like Tees, Directional Coupler, etc.
CO606.4	To understand the transmission characteristics of non-reciprocal devices like Isolator, Circulator, Twist (gyrator) etc.
CO606.5	To analysis the V-I characteristics of Gunn Diode.
CO606.6	To observe and draw the polar pattern of Horn antenna.
BEENE602P Digital Signal Processing	
CO607.1	Apply the techniques, skills, and modern engineering tools like MATLAB and digital processors.
CO607.2	Design the filters to suit requirements of specific applications.
CO607.3	Analyze and process the signals in the discrete domain.
CO607.4	Apply sampling theory, analog to digital conversion, digital to analog conversion and understand sampling and reconstruction.
CO607.5	Understand the implementation of the DFT on MATLAB.
CO607.6	Understand the Transform domain and its significance and problems related to computational complexity.
BEENE606P Electronics Workshop Practice	
CO608.1	Use DSO and Spectrum Analyzer.
CO608.2	Interface peripherals with computer.
CO608.3	Design PCB using PCB designing software.
CO608.4	Design & fabricate mini project.

CO608.5	Identify and understand importance of electrical and electronic components.
CO608.6	Develop the basic logic and operation of electronics component and design the mini projects.
BEENE607P Industrial Visit	
CO609.1	The ability to apply the fundamental knowledge of science and engineering.
CO609.2	Ability to use different tools (computer tools and statistics) to aid the assessment processes
CO609.3	Demonstrate the importance of interdisciplinary nature of work
CO609.4	Make aware of professionalism, ethics, and environmental laws and regulations
CO609.5	Understand what professional ethics are and how do ethics affect the outcomes of laws and regulation
CO609.6	Ability to understand environmental laws and regulations to develop guidelines, procedures
VII SEMESTER	
BEENE701T DSP Processor & Architecture	
CO701.1	Learn the fundamentals of DSP processors.
CO701.2	Describe the architecture & addressing modes of fixed point processor TMS320C5X.
CO701.3	Describe instruction set of TMS320C5X and write Programs for processing signals.
CO701.4	Describe the architecture, instruction set & write programs using floating point DSP processor TMS320C54X.
CO701.5	Compare DSP processors like C5X, C54X and C6X and design & implement DSP algorithm using code composer studio of TMS320C6X and Motorola DSP563XX.
CO701.6	Compare the complexity of DFT and FFT algorithm and design decimation filter, interpolation filter & wavelet filter.
BEENE702T Embedded System	
CO702.1	Describe the financial issues related to Prototyping & Production of an Embedded System
CO702.2	Describe various types of an Embedded processors (RISC & CISC)
CO702.3	Describe the architecture of ARM7 Core & SoC
CO702.4	To develop program using ARM7 Processor
CO702.5	To describe various communication Protocols used in embedded system
CO702.6	To study various case studies based on embedded systems
BEENE703T Optical Communication	
CO703.1	To learn the basic elements of optical fiber.
CO703.2	To understand the different kinds of losses, signal distortion in optical wave guides & other Signal degradation factors.
CO703.3	To classify various optical source materials, LED structures, LASER diodes
CO703.4	To learn the fiber optic receivers such as PIN, APD diodes, receiver operation & Performance
CO703.5	To understand the difference between Analog and Digital Link and their parameters.
CO703.6	To understand the operational principal of WDM types and application of optical amplifier.
BEENE704T Advanced Digital System Design	

CO704.1	Design and model digital circuits with HDL at behavioral, structural, and RTL.
CO704.2	Design and optimize complex Combinational and sequential circuits.
CO704.3	Design digital systems that are reconfigurable for testing.
CO704.4	Design examples on finite state machines.
CO704.5	Simulate and synthesize programming models for digital circuits using ISE and Quartus tools.
CO704.6	Experimentation on Hardware / software co-design (FPGA design)
BEENE705T Elective-I Digital Image Processing	
CO705.1	To understand Basics and fundamentals of Digital Image Processing.
CO705.2	To get knowledge of Histogram and Filtering in Enhancement of Image.
CO705.3	To use various Transform Techniques for Image Enhancement.
CO705.4	To understand the Coding and Compression Techniques.
CO705.5	To Analyze the Image by Segmentation, Representation and Description.
CO705.6	To demonstrate the application of image processing algorithms to real life problems.
BEENE705T Elective-I Mobile Communication	
CO705.1	Have an introduction to Mobile Communication and understand cellular system.
CO705.2	Understand mobile radio environment.
CO705.3	Know the concept of Switching systems and modulation technique of mobile communication.
CO705.4	Understand the concept of equalization, diversity and channel coding.
CO705.5	Understand multiple access technique.
CO705.6	Understand the GSM system.
BEENE701P DSP Processor & Architecture	
CO706.1	Understand the architecture and programming of TMS and Motorola Processors.
CO706.2	Implement different processing algorithms on DSP processors.
CO706.3	Understand how to generate basic signals using TMS320C54XX.
CO706.4	Design different types of filters and study their characteristics.
CO706.5	Implementation of FFT using code Composer studio.
CO706.6	Designing FIR filter & IIR filter using MATLAB and find finite word length effect & cross verify Using DSP processor.
BEENE702P Embedded System	
CO707.1	Student will be able to understand different instruction used in programming
CO707.2	Student will be able to write simple Programs using embedded c
CO707.3	Student will be able to write complex Programs using embedded c
CO707.4	Student will be able to design Effective algorithm design for specific experiment
CO707.5	Student will be able to perform experiments on different peripheral devices like LCD, Seven Segment, GSM, etc
CO707.6	Student will be able to write program in Assembly/c, to implement the communication protocol.
BEENE704P Advanced Digital System Design	
CO708.1	To model, simulate, verify the digital model with hardware description language.
CO708.2	To learn the modular design style to create large digital logic circuits.
CO708.3	To learn about modeling of system tested with test bench.
CO708.4	To create and simulate FSM using VHDL.

CO708.5	To learn about power analysis based FPGA system.
CO708.6	To design and prototype with programmable logic devices.
BEENE706P Project Seminar	
CO709.1	Students will demonstrate the ability to perform close and critical readings.
CO709.2	Students will demonstrate the ability to consider critically the motives and methods of scholarship and the relationship between them.
CO709.3	Students will demonstrate the ability to distinguish opinions and beliefs from researched claims and evidence and recognize that kinds of evidence will vary from subject to subject.
CO709.4	Students will demonstrate the ability to ask disciplinarily appropriate questions of the material and recognize when lines of inquiry fall outside of disciplinary boundaries.
CO709.5	Students will demonstrate the ability to evaluate, credit, and synthesize sources.
CO709.6	Students will demonstrate the ability to discern the assignment's intended audience and objectives and respond appropriately
EIGHT SEMESTER	
BEENE801T Micro Electromechanical System & System on Chip	
CO801.1	Understand working principles of currently available micro sensors actuators benefits of Miniaturization applications of MEMS devices.
CO801.2	Understand the basic principles application of micro fabrications process design & manufacturing of MEMS Device surface & bulk micromachining, wet & dry etching process.
CO801.3	Understand the conceptual design of devices & system chemical biological optical & thermal transducers.
CO801.4	Understand the basic principles in designing MEMS components such as capacitors, inductors, switches & antennas & MEMS applications in communication, space & defense.
CO801.5	Understand microelectronics, micro system packaging.
CO801.6	Consider recent advancements in the field of MEMS & Microsystems technology system on chip & applications of MEMS.
BEENE802T Computer Communication Network	
CO802.1	Understand the requirement of theoretical & practical aspect of computer network.
CO802.2	Select IEEE standard 802.11 in physical layer.
CO802.3	Understand the different wired & wireless LAN standards & Routers.
CO802.4	Understand IPv4, IPv6 and different addressing schemes like IP Address, Hardware Address, etc.
CO802.5	Understand the applications like ping, FTP, telnet.
CO802.6	Understand the concept of computer network security and authentication.
BEENE803T CMOS VLSI Design	
CO803.1	Design PMOS and NMOS transistor.
CO803.2	Design CMOS transistor.
CO803.3	Implementation different combinational logic circuits.
CO803.4	Experiment on CMOS logic design.
CO803.5	Design CMOS transistor. Design layout for various circuits.

CO803.6	Detect and correct errors in VLSI Design.
BEENE804T Elective-II Satellite Communication	
CO804.1	Understand the basics and fundamentals of Satellite Communication.
CO804.2	Do research with capabilities in the design of Uplink, Downlink, Transponder with Power, Noise Temperature, C/N ratio and development, manufacture of satellite communication systems used in a wide spectrum of applications.
CO804.3	Understand the Data Communication with FDMA, TDMA and CDMA Multiple Access.
CO804.4	Acquire the technical competence in Atmospheric effect in Satellite Communication engineering.
CO804.5	Identify, formulate and model problems and find Satellite Communication engineering solutions based on Data Communication Errors, Detection and Correction.
CO804.6	Aware about the Earth Station Technology
BEENE805T Elective-III Data Compression & Encryption	
CO805.1	Implement the various text compression techniques.
CO805.2	Implement various Audio compression techniques.
CO805.3	Implement various Image and Video compression technique.
CO805.4	To gain the knowledge of Encryption techniques.
CO805.5	To know the application of the Encryption techniques to Digital communication.
CO805.6	To provide various authentication using Digital communication.
Computer Communication Network	
CO806.1	The student will be able to understand and select various cables and connectors used for networking.
CO806.2	The student will be able to understand the software NS2 and simulate different networking models
CO806.3	The student will be able to understand the different protocol working on NS2.
CO806.4	The student will be able to understand different data transmission techniques using TCP and UDP Protocol.
CO806.5	The students will be able to understand to design the different IP addressing scheme.
CO806.6	The student will be able to understand the concept of computer network security.
CMOS VLSI Design	
CO807.1	Design PMOS and NMOS transistor.
CO807.2	Implementation different combinational logic circuits.
CO807.3	Implementation of different logic equations.
CO807.4	Implementation of sequential circuits.
CO807.5	Design layout for various circuits.
CO807.6	Design CMOS transistor.
BEENE806P Project	
CO808.1	Understand problem identification, which formulation and solution.
CO808.2	Identify and summaries the appropriate literature review and analyze previous research work and relate them.

CO808.3	Demonstrate the knowledge, skills attitude of electronic engineers through the implemented product.
CO808.4	To present the project outlined approach and expected result using good oral presentation skill.
CO808.5	To work in team and communicate with others.
CO808.6	To compile analyze and present the output of project in form of report.

MECHANICAL ENGINEERING

THIRD SEMESTER

BEME301T Applied Mathematics - III

CO301.1	Student can identify Laplace transforms & inverse Laplace transforms of various types of function, its properties and apply it to solve differential equation and are able to use in engineering Problems.
CO301.2	Students are competent to work out the Fourier series representation of a periodic function in both exponential and sine-cosine forms and to solve partial differential equation and use Fourier transforms and its inverse in practical applications.
CO301.3	Student can find extreme values of functionals using Euler's eq. and also apply knowledge to solve Isoperimetric problems and boundary value problems
CO301.4	Student understand analytic function of a complex variable and are able to apply Cauchy integral theorem and residue theorem to solve contour integrations.
CO301.5	Students are able to solve Lagrange's form and linear Homogeneous equation of Higher order with constant coefficient. They can apply method of separation of variable for solving P.D.E. in various engineering problems and also in Laplace transforms
CO301.6	Student can determine eigen values and eigenvectors and the solution of linear differential equation using matrix method and student apply concept of matrices and its application for solving engineering problems.

BEME302T Kinematics of Machine

CO302.1	Basic concepts of mechanism, Kutzbach criterion, Grubler's criterion, Inversions of Kinematic chain, Degree of Freedom problems & various types of mechanism.
CO302.2	Quantitative kinematic analysis of mechanism, Coriolis component of acceleration, Instantaneous center method.
CO302.3	Concepts of cam & follower, Synthesis of cam for different types of follower motion.
CO302.4	Motion transmission by toothed wheels, gear tooth terminologies, interference & undercutting, epicyclic gear train.
CO302.5	Synthesis of mechanism by graphical method, Freudenstein's equation.
CO302.6	Concept, types, working & problems on clutches & brakes, Laws of friction.

BEME303T Fluid Mechanics

CO303.1	Various properties of fluid, types of fluid continuity equation Cartesian co-ordinates.
CO303.2	Hydrostatic law, pascal law, total pressure on different surfaces and stability of floating and submerged bodies.
CO303.3	Dynamics of flow and various application of Bernoulli's equation.
CO303.4	Laminar and Turbulent flow and methods of dimensional analysis.
CO303.5	Flow through pipes and power transmission through pipes
CO303.6	Boundary layer concept and flow around Immersed Bodies.

BEME304T Manufacturing Processes

CO304.1	The importance of manufacturing processes, techniques of pattern making & molding
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CO406.2	Ecosystems, Energy flow in the ecosystem - water, carbon, oxygen, nitrogen; and energy cycles, integration of cycles in nature. Ecological succession; Food chains, food webs and ecological pyramids; Ecosystem types -characteristic features, structure:, and functions of forest, grassland, desert and aquatic ecosystems.
CO406.3	Introduction - biodiversity; at genetic, species and ecosystem levels Bio-geographic classification of India Value of biodiversity –
CO406.4	Definition; Causes, effects and control measures of air, water, soil, marine, noise and thermal pollutions and nuclear hazards. Solid waste management - Causes, effects and control measures of urban and industrial waste. Role of individual and institutions in prevention of pollution. Disaster management Floods, Earth quacks, Cyclone and land slides.
CO406.5	Social Issues and the Environment
CO406.6	Human Population and the Environment
BEME407P Mini Project	
CO407.1	During this course, student will learn regarding fabrication/construction of a simple mechanical or electro-mechanical working model using various manufacturing processes. Students will be able to familiarize themselves with new technical topics and can participate in technical seminars and paper contests.
FIFTH SEMESTER	
BEME501T Industrial Economics & Entrepreneurship Development	
CO501.1	Basic concepts of Industrial Economics, its classification, Law of demand & various concepts related to demand.
CO501.2	Various factors of production, Polices of firm & industry, Cost concepts & Methods of Depreciation.
CO501.3	Inflation & its effects, Direct & Indirect taxes, Types of Competition, Share Market & its terminologies.
CO501.4	Innovation, creativity, etc. Concepts, development, IPR, Patent & Laws related to Patents.
CO501.5	Concept & relations of Entrepreneurship, Entrepreneur, Growth affecting factors, various theories, Women Entrepreneurship & role, setup procedure & polices of SSI.
CO501.6	Preparation of project report, market survey & latest SSI schemes of DIC.
BEME502T Design Of Machine Elements	
CO502.1	Introduction to Mechanical Engineering Design, Design methods, different aspect in design. Design of types of riveted joint and cotter joint
CO502.2	Design of different types of bolted joint, welded joints and Brackets.Design of Pressure vessel.
CO502.3	Design of shaft under various loading condition. Design of different types of keys. & Springs.
CO502.4	Design of power screw and screw jack.Design of different types of clutches and brakes
BEME503T Advance Production Processes	
CO503.1	Different types of non-conventional machining processes and its applications in industry.
CO503.2	Advanced joining processes, its classification and applications in industry.
CO503.3	Advance machining processes, its classification and applications in industry.
CO503.4	Die cutting operations, equipments for sheet metal working.
CO503.5	Principle of jig and fixtures, ,its classification and applications in industry.

CO503.6	Principle of super finishing processes, advantages and disadvantages and application of LASER in surface modification.
BEME504T Heat Transfer	
CO504.1	Various modes of heat transfer, and Laws of heat transfer & conservation of energy requirement.
CO504.2	One dimensional steady state and unsteady state heat conduction.
CO504.3	Principle of convection and Empirical and practical relations for forced convection.
CO504.4	Empirical and practical relations for free convection and its systems.
CO504.5	Study and analyze radiation heat transfer with and without radiation shield.
CO504.6	Study, design and to analyze heat exchanger equipments.
BEME505T Mechanical Measurement & Metrology	
CO505.1	Basic concept of measuring system and generalized model of system elements and calibration.
CO505.2	Measurement of linear and angular displacement, speed, load, force, torque & power without analytical treatment.
CO505.3	Measurement of pressure, vacuum, sound, light and temperature without analytical treatment.
CO505.4	Basic concept of standards of measurement, requirement of interchangeability, measurement of straightness & flatness.
CO505.5	Limit, fit & tolerance analysis. Design of limit gauge & process planning sheet.
CO505.6	Use of comparators, optical profile projector and measurement of screw thread & gear tooth.
BEME506P Computer Applications-I	
CO506.1	The programs for numerical methods and for problem solving in the area of Mechanical Engineering.
CO506.2	The concept of OOPs and will get introduced with mathematical software.
BEME507P Industrial Visit	
CO507.1	Layout of industry.
CO507.2	Information about various department of industry.
CO507.3	Interacted with various machine, manufacturing processes and techniques use in industry.
SIXTH SEMESTER	
BEME601T Energy Conversion- I	
CO601.1	Study the thermal power plant process, Boiler and its mountings and accessories.
CO601.2	Draught classification and its Analysis, Performance of steam generators.
CO601.3	Steady of various Fluidized bed boiler and working principle of Cogeneration plant.
CO601.4	Steady the working principle of Nozzles and Steam turbines.
CO601.5	To analyze steam turbines.
CO601.6	To study and analyze Steam condensers.
BEME602T Control Systems Engineering	
CO602.1	Study of Control System components. Mathematical modeling of control system.
CO602.2	Transfer Function system Representation through Block Diagram and Signal Flow Graph.
CO602.3	System Response & Time Domain Response Analysis.
CO602.4	Control system analysis. Concept and types of stability.

CO606.1	The concept and meaning of DBMS and also its industrial applications.
CO606.2	The Entity Relationship Model and will be able to design E-R database scheme.
CO606.3	The basics of SQL and DDL along with modification of the database.
BEME607P Industrial Case Study	
CO607.1	Establishment of industry
CO607.2	Application of various Machines and Tools.
CO607.3	Various problems come in industry.
CO607.4	Various techniques to solve problem come in Industry.
SEVENTH SEMESTER	
BEME701T Industrial Engineering	
CO701.1	Productivity, its importance and tools & techniques for improvements of productivity, concept and practical application of method study, motion study.
CO701.2	Work measurement techniques, various tools for work measurement work sampling, Estimation of time required for completion of any activity or job. Involvement of Human in Engineering, Man machine concept, design of environment, system, work place etc.
CO701.3	Forecasting and its various methods.
CO701.4	Maintenance, their types, Reliability, maintainability, failure data analysis.
CO701.5	Quality control, various tools for quality control, Characteristics, sampling concepts, its significance and various sampling plans.
CO701.6	Statistical Quality Control, Quality Planning, assurance, audit and Philosophy of quality improvements.
BEME702T3 ELE-I :- Automobile Engineering	
CO702.3.1	Basic concept of layout of chassis and its main component, frame, rigid vehicle. Various type of engine used in automobile their fuel supply system cooling 7 lubricating system.
CO702.3.2	Necessity requirement & type of clutches system & transmission.
CO702.3.3	Various types of transmission system & components. Necessity and type, working of breaks.
CO702.3.4	Principle of steering & various terminology used in steering system, working & function of suspension system.
CO702.3.5	Working & various methods of testing & charging of electrical system and ignition system. Various concept used in wheels & tyres.
CO702.3.6	Safety consideration, modern development in automobile.
BEME702T4 ELE-I :-Power Plant Engineering	
CO702.4.1	Sources of energy and power, Indian energy scenario with various terms and definition in fluctuating loads and its effect. Economics in power plant and its scheduling.
CO702.4.2	Ideal working fluid for vapour power cycles with regeneration and reheating. Gas turbine and steam turbine power plant with cogeneration.
CO702.4.3	Properties and analysis of coal with combustion reaction and its equipments for burning coal. Layout of steam power plant and its various components.
CO702.4.4	Components of hydroelectric power plant, its classification and its comparison with other power plant with hydrology containing rainfall, hydrograph.
CO702.4.5	Components of nuclear reactor and its classification. Effect of nuclear waste on environment and its disposal.

CO702.4.6	Components of gas turbine power plant and its classification. Different components of diesel power plant and its performance along with emerging technologies.
BEME703T Computer Aided Design	
CO703.1	Basic concept of CAD, Comparison between CAD and conventional design, generation of algorithms for basic geometric entities.
CO703.2	Introduction to windowing & clipping, 2D transportation, 3D transportation.
CO703.3	Techniques for geometric modeling and assembly modeling.
CO703.4	Finite element analysis, one dimensional problem, Finite element modeling, Potential energy approach.
CO703.5	Truss and Two dimensional FEM, Derivation of shape functions for CST element, Pre processing and Post processing.
CO703.6	Optimization in Design, objectives of optimum design, Johnson's method of optimum design, Optimum design with normal and redundant specifications of simple machine elements.
BEME704T Energy Conversion - II	
CO704.1	Construction, operation and analysis of Positive displacement type of air compressors.
CO704.2	Construction, operation and analysis of Blowers, Centrifugal and Axial flow compressor.
CO704.3	Introduction, classification , working, Combustion and Fuel injection systems.
CO704.4	Testing and Performance of I. C. Engines with measuring instruments.
CO704.5	Detail analysis of conventional single stage vapour compression refrigeration system and Introduction to Vapor absorption and air refrigeration system.
CO704.6	Introduction and analysis simple Air conditioning system.
BEME705T Design Of Mechanical Drives	
CO705.1	Design of Coupling, Design of Flywheel: Functions, design of flywheel. Design of Bearings:
CO705.2	Design of Flat belt drive, analysis of belt tension, condition for transmitting maximum power, Design of V belt drive: Design of Roller chain drive, Design of wire rope drive:
CO705.3	Design of Gears, Design of Spur Gear drive, Helical Gear drive. Design of Bevel Gear Drive
CO705.4	Design of Worm Gear Drive, Design of I. C. Engine components, Introduction to selection of material for I. C. engine components
EIGHTH SEMESTER	
BEME801T Industrial Management	
CO801.1	Various principles, concepts of management, Principles of Henry Fayol& its functions.
CO801.2	Meaning, functions of personal management, worker's welfare.
CO801.3	Meaning & concepts of marketing management, new product development.
CO801.4	Financial management, sources of finance & various concepts related to budget.
CO801.5	Meaning, principles & selection of plant location, plant layout, Industrial safety, types of production.
CO801.6	Recent trends in production & operation management, Reverse Engineering.

BEME802T1 Finite Element Method	
CO802.1.1	Basic concepts of finite element method which consist types of element, boundary conditions, shape function, coordinate systems etc. It also includes basics of solid mechanics and matrix algebra.
CO802.1.2	Truss element, beam element and frame elements stiffness matrix and their use.
CO802.1.3	Multipoint constraint 1D element, 2D CST element and isoparametric elements stiffness matrix and their use.
CO802.1.4	Concept of heat transfer and un-damped free vibration in finite element problems. Also it includes FEM software basics as pre-processing and post-processing.
BEME805T2 Elective II-Computer Integrated Manufacturing	
CO805.2.1	Evolution , Concept ,scope and Components of CIM along with the Basic Concept of Concurrent Engineering.
CO805.2.2	NC, CNC & DNC their Basic Components and classification of CNC machine tools.
CO805.2.3	Group Technology, benefits of GT and issues in GT. Part families, classification and coding with Production flow analysis.
CO805.2.4	Flexible manufacturing systems,Level of Flexibility. FMS componens,Material handling & storage system, along with FMS Layout Configurations.
CO805.2.5	Manufacturing Planning,Computer aided process planning (CAPP), Retrieval & Generative CAPP systems and various Production Planning.
CO805.2.6	Computerized statistical process control, Shop floor control, Shop floor data collection techniques, CAQC and Automated inspection devices.
BEME802T5 Elective – II: Refrigeration And Airconditioning	
CO802.5.1	Introduction to basics of various refrigeration cycles and its nomenclature.
CO802.5.2	Compound Vapour Compression Refrigeration system and multiple evaporator system.
CO802.5.3	Air cycle refrigeration & its application.
CO802.5.4	Basics and application of the Cryogenics.
CO802.5.5	Study of various Advanced Psychometric processes & its Heat Load Calculations
CO802.5.6	Study the principle of the transmission of the air, grills and diffuser.
BEME803T1 Elective-III: Advanced Manufacturing Techniques	
CO803.1.1	Need, classification and historical development of nontraditional machining processes.\
CO803.1.2	Machining and process parameters of AJM process, Ultrasonic machining process, water jet machining process.
CO803.1.3	To study ECM, EDM, LBM and plasma arc machining process.
CO803.1.4	Details study of MIG and TIG, LASER beam welding and submerge arc welding etc.

CO803.1.5	To study solid phase welding such as ultrasonic welding, friction welding with recent developments.
CO803.1.6	To study various advance casting processes like continuous casting, evaporative pattern casting, centrifugal casting, etc.
BEME803T5 Advance Internal Combustion (Ic) Engine	
CO803.5.1	Study of engine classification, its components, different lubrication system and engine losses.
CO803.5.2	Study of conventional and alternative fuel of automobile with the fuel injection system.
CO803.5.3	Study of combustion stages, ignition system and modern techniques of charging the S.I. engine
CO803.5.4	Study of combustion stages, ignition system and modern techniques of charging the C.I. engine with auxiliary apparatus.
CO803.5.5	Study of air pollution cause due to I.C. engine with exhaust treatment system for controlling the pollution.
CO803.5.6	Study of the testing of all important parameter of the engine, with its characteristics.
BEME804T Automation In Production	
CO804.1	Definition, types, reasons, strategies for automating, arguments for and against automation along with partial automation and manual assembly lines.
CO804.2	Basic concepts, coordinate system and machine motion, Types of NC system ,part programming and tape formats, APT programming and Adaptive control.
CO804.3	Introduction, to robot anatomy, end effectors, sensors, robot programming and applications .
CO804.4	Automated Guided Vehicle Systems and their Types, AGVS. Vehicle guidance & routing, Traffic control & AS/RS.
CO804.5	Automated inspections,Machine vision image acquisition & digitization, image processing & Group Technology: Part families, parts classification & coding, Opitz classification systems production
CO804.6	Manufacturing planning, manufacturing control, Computer integrated manufacturing, FMS and CAPP.
BEME805T Energy Conversion - III	
CO805.1	Principles and working, and analysis of Gas Turbine.
CO805.2	Principles & working of turbojet, tuboprop, Ramjet & pulse jet and its analysis. Introduction and working of Nuclear Power Plant.
CO805.3	To study the principle and working of various solar energy equipments.
CO805.4	To study Energy Auditing.
CO805.5	Study of various Hydraulic systems.
CO805.6	Study of various Pneumatic Systems.
MBA DEPARTMENT	
SEMESTER I	
MBCI - 1 – Principles Of Management	
CO1	To gain an understanding of principles and functions of management.

CO2	To gain insights into history and development of management thought.
CO3	To analyze the managerial issues and problems arising in an organization.
CO4	To make use of multiple approaches in management for solving managerial issues and problems.
CO5	To see how the companies functions worldwide and management developments in global perspective.
MBCI - 2 – Managerial Economics	
CO1	To gain an understanding the concept of Managerial economics and demand and supply analysis.
CO2	To understand the concept of production and production functions and cost analysis.
CO3	To gain the knowledge of market structures and about pricing practices.
CO4	To understand the current scenario of national income, GDP and fiscal Policies.
MBCI - 3 – Accounting For Manager	
CO1	To provide an knowledge about the accounting with reference to journal and ledger, trial balance.
CO2	To understanding the accounting of joint stock company and their audit system to provide a balance sheet of the company.
CO3	To make use of Cash flow statement, ratio analysis, budget and budgetary control in business and application in decision making.
MBCI - 4 – Business Legislation	
CO1	To provide basic understanding of law of contract.
CO2	To impart basic provisions of Companies Act concerning incorporation and regulation of business organizations.
CO3	To create awareness about important legislations namely Consumer Protection Act.
CO4	To gain knowledge about the information technology act.
MBCI - 5– Business Communication And Information System	
CO1	To become aware of students to some of the practices in communication skills, managerial communication that is currently in use current needs of the industry.
CO2	To help them acquire necessary communication skills to carryout day-to-day managerial knowledge to negotiate and persuade various parties involved in everyday business.
CO3	To understand various MIS operating in functional areas of the organization different types of information systems and explain its relationship to the various activities of the organization for effective decision making.
CO4	To express the role in ERP and major concepts of data base management systems, system security and control.
MBCI - 6– Research Methodology And Quantitative Technique	
CO1	The purpose of this course is to provide an introduction to both basic and advanced analytical and hypothetical tools for business disciplines.
CO2	Beginning with simple statistical methods, the Course builds to more robust techniques such as linear regression ,correlation Sampling and probability methods .
CO3	Emphasis is placed on theoretical understanding of concepts as well as application of key methodologies used by the industry.
CO4	Importance of Hypothesis, sampling items, methods and its applications, statistical checking

	of items.
SEMESTER II	
MBCII 1 – Human Resource Management & Organizational Behaviour	
CO1	Explain students with various functions and processes related to human resource management.
CO2	To provide conceptual framework, skills and competencies required to manage people required for human resource planning and development.
CO3	Explain to students with various issues related to wage, salary administration and development.
CO4	Explain to students Industrial Disputes and Settlement mechanism with the knowledge of social security legislations and employee safety at workplace.
MBCII - 2 – Financial Management	
CO1	To understand the source of finance short term as well as long term finance.
CO2	To understand calculation of various techniques of capital budgeting and describe the capital budgeting process of company.
CO3	To understand the concept of capital structure and cost of capital of the firm.
CO4	To describe the working capital management and evaluate the company's management of account receivable Inventory and account payable overtime.
MBCII - 3 – Marketing Management	
CO1	To introduce the concepts of marketing in theory and practice.
CO2	To develop an appreciation for the tools, concepts and models required to evaluate the market, and develop a feasible market plan.
CO3	To develop an understanding of segmentation, targeting and positioning processes.
CO4	To introduce the students to various marketing mix strategies.
CO5	To gain knowledge of design a comprehensive marketing plan and outline its importance.
MBCII-4 – Operations Management	
CO1	It explains the Scope, trends, strategies and its applications to improve production.
CO2	Understanding of services in terms of plant location and layouts.
CO3	Emphasis on Material requirement and their methods.
CO4	Quality control leads to customer satisfaction and improve productivity.
MBCII 5- Cost Accounting	
CO1	To understand the basic concept Cost accounting and process used to determine product costs.

CO2	To be able to analyze and evaluate information for cost ascertainment, planning, control and decision making.
CO3	To understanding standard costing and variance analysis.
CO4	Describe the Contract costing and operating costing.
MBCII 6 – Economic Environment Of Business	
CO1	The basic objective of the course is to develop understanding and provide knowledge about business environment to the management students.
CO2	To promote basic understanding on the concepts of Business Environment and to enable them to realize the impact of environment on Business.
CO3	To provide knowledge about the Indian and international business environment.
CO4	The objective is to provide knowledge about technological environment.
III SEMESTER	
MBFIII-1- Project Management	
CO1	The Purpose of the Course is to provide knowledge of the project with evaluation of time for the customer satisfaction.
CO2	Guiding the importance of procurement and risk analysis with cost budgeting and control.
CO3	Basic knowledge of planning, Implementation to achieve the best path for the completion of the project.
CO4	Cost estimation ,cost planning work life team work , structure selection leads to project completion explains the subject.
MBFIII-2- Strategic Management	
CO1	The purposes of the course are to provide the knowledge of the strategies and the process of formulating it.
CO2	To know the importance of Environmental analysis and components of internal and external environment.
CO3	To know the process formulation of strategies on corporate level.
CO4	To gain the knowledge of business and functional level strategies.
ELECTIVE / SPECIALIZATION COURSES	
CORE GROUP – A – MARKETING MANAGEMENT	
PAPER 1: MBEIII - 11 – Sales And Distribution	
CO1	To develop understanding and appreciation of the Sales & Distribution processes in organizations and the practical aspects of the key decision making variables in sales force and distribution channel management.

CO2	To prepare students to manage sales and channel teams for different types of selling, with the purpose of enhancing value based output and productivity.
CO3	To prepare students to manage sales and channel teams for different types of selling, with the purpose of enhancing value based output and productivity.
CO4	Tools and strategies necessary for designing, motivating and evaluating sales & distribution through supply chain management systems and to gain insight about the various concerns as related to the fields of sales and distribution management.

PAPER 2: MBEIII - 12 – Integrated Marketing Communication And Brand Management

CO1	To understand the functional areas of marketing communications activities and approaches.
CO2	The role of IMC in Media Planning, its evaluation and effectiveness.
CO3	Importance of branding, its challenges and opportunities.
CO4	Create consumer based brand equity.
CO5	Generate branding strategies.

CORE GROUP – B FINANCIAL MANAGEMENT

PAPER 1: MBEIII - 11 – Corporate Financial Management

CO1	It emphasis on long term investment which includes risk and uncertainty analysis and probability distribution.
CO2	Importance of Lease, hire purchase and project finance in business decision.
CO3	To understand the valuation of business and dividend decision.
CO4	To understand the contemporary issue of financial management.

PAPER 2 : MBEIII - 12 – Securities, Portfolio And Risk Management

CO1	The courses objective is to provide a theoretical framework for considering portfolio problems and issues and to apply these concepts in practices.
CO2	To give everybody a base level oof security analysis and portfolio knowledge that an MPA from a top business school should possess.
CO3	To give everybody the ability and confidence tackle common financial problem in practices.
CO4	To provide adequate preparation for Risk management and Hedging with Derivatives.

CORE GROUP – C – HUMAN RESOURCE MANAGEMENT

PAPER 1: MBEIII - 11 – Training And Development

CO1	To provide basic understanding of training and training need analysis.
CO2	To learn the training process.

CO3	To learn the importance of training evaluation with respect of different models.
CO4	To gain importance of management development.
PAPER 2 : MBEIII - 12– Performance & Compensation Management	
CO1	Understanding the concept of performance appraisal and performance appraisal systems.
CO2	To gain the knowledge of different types of performance appraisal methods.
CO3	To gain the knowledge of compensation planning.
CO4	To understand the importance of career management and career development.
COMPLEMENTARY GROUP – A OPERATIONS MANAGEMENT	
PAPER 1: MBEIII-11 Logistics And Supply Chain Management	
CO1	The objective of the course is to relate supply chain management with the logistics.
CO2	It explains the design and distribution networks and application of logistics and supply chain to increase the business.
CO3	Role of e supply chain, Technology, Transportation decision, flow of Material, Modes of facility emphasis the supply chain and logistics.
CO4	Understanding of Aviation Technology and cargo Process to enhance the logistics.
PAPER 2: MBEIII-12 Operation Research	
CO1	To learn the concepts of operations research applied in business decision making.
CO2	The objective of this course is to help the students acquire quantitative tools, and use these tools for the analysis and solution of business problems.
SEMESTER IV	
MBCIV - 1 – Business Ethics & Corporate Governance	
CO1	To learn the concepts of business ethics.
CO2	To provide knowledge about business, organizational ethics and Corporate Social Responsibility.
CO3	To gain an understanding of the contemporary issues of corporate governance in the wake of changing business ambience.
CO4	To gain importance of environment, marketing and HRM ethics.
MBCIV - 2 – Entrepreneurship Development	
CO1	It Introduce how does an Entrepreneurship plays the role in economic development.
CO2	To study various types of Entrepreneurship.

CO3	To generate business ideas in setting up a small business enterprises.
CO4	Analyzing of project appraisal, functional plans & marketing plans.
CO5	It explains the importance & objectives of MSME towards entrepreneurship development.
MBFIV - 2 – International Business Management	
CO1	Understanding the concepts and importance of international trade.
CO2	To gain the knowledge about foreign trade of India.
CO3	To know the purpose of the exchange rate management and concepts like FEMA PPP, foreign exchange markets.
CO4	To understand the purpose of knowing broad perspective about international business environment and different organizations.
ELECTIVE / SPECIALIZATION COURSES	
CORE GROUP – A – MARKETING MANAGEMENT	
PAPER 3: MBEIV - 13 – Consumer Buying Behaviour	
CO1	To define the concept of consumer behaviour and reveal its importance in the context of marketing.
CO2	To examine the consumer decision-making process.
CO3	To study the individual determinants of consumer behavior
CO4	To study the group determinants of consumer behavior.
CORE GROUP – B FINANCIAL MANAGEMENT	
PAPER 3: MBEIV 13 Investment Environments And Wealth Management	
CO1	To gain the knowledge about financial market and regulatory bodies.
CO2	To know the purpose of Different types of Insurance products and Principle of Insurance
CO3	To develop the concept of Mutual fund and its application in business decision.
CO4	To understanding the Investor life cycle, Investment options and evaluation of portfolio performance.
CORE GROUP – C – HUMAN RESOURCE MANAGEMENT	
PAPER 3: MBEIV - 13 Industrial Relation & Labour Laws	
CO1	To understand perspectives of Industrial Relations and various approaches and various futuristic issues in the field of Industrial Retaliations.
CO2	To understand knowledge of labour laws, especially the nature and scope of labor law, the rationale of labor laws in organizations.

CO3	To understand wage legislation and their acts of Industrial Retaliations.
CO4	To study labour legislations pertaining to Industrial Relations and constitutional provisions regarding labour law.
COMPLEMENTARY GROUP – A – OPERATIONS MANAGEMENT	
PAPER 3: MBEIV - 13 – Total Quality Management	
CO1	Understanding of Quality control and its various methods for enhancing production.
CO2	Different statistical tools, attributes, charts, samplings conveys the technique of quality control.
CO3	Understanding of quality improvement techniques with diagrams and charts.
CO4	To analyze the benchmarking, processes, stages of Six sigma and their benefits.

12. CODE OF CONDUCT

The institute has formulated specific code of conduct for the students, to inculcate human and ethical values in them and make them responsible citizens to serve the society in a better way by providing them quality education.

Responsibilities of the Students

1. Behave in the institute campus & hostels in a dignified and courteous manner and show due respect to the authorities, women, elders and classmates.
2. Follow the dress code given by the institute and decent dressing manners, without any obscenity during cultural events.
3. Maintain qualitative academic, cultural and social atmosphere in accordance with the vision of the institute.
4. Access all educational opportunities and benefits available in the institute, to prosper academically and technically.
5. Follow Institutional rules and directions issued from time to time, in the college and hostels to ensure safety, health and well-being of students.
6. Refrain from all activities deemed under the purview of 'ragging' which is a criminal offence.
7. Abstain from the use/possession of alcohol, tobacco or any other narcotic /intoxicants in the campus and hostels.
8. Respect the laws of the country, human rights, cultural and social values.
9. Students should always carry their college identity cards.

Behavior of the students

1. Student activities should assist the harmonious function of the institute.. Activities adversely affecting the harmony, would not be permitted.
2. Students should spend their free time in the Library Reading Room.
3. KDKCE is a “Smoking Free Campus”.
4. Silence shall be maintained in the designated premises of the institute.
5. Students should not use mobile phones in the class room, Library, Computer Centre, Examination Halls, etc.
6. Students should not indulge in any undesirable activity and maintain discipline in the campus and hostel.
7. Students should not indulge in anti-institutional, anti-national, anti-social, or immoral activities in the Campus and hostels.
8. Students should not deface, disfigure, damage, and destroy any public, private or Institutional property.
9. Students will have to obtain prior permission from the college authorities to display or exhibit any banners, flags or boards etc. in the campus and hostel.
10. Students should park their vehicles in the parking space.
11. Students shall leave the classroom only when the session is over with the permission of the teacher.
12. Students should avoid littering and use dustbins.
13. Students should follow all the rules and regulations as directed by the University while appearing for any examination.
14. Students are expected not to involve in any conduct which leads to lowering of the esteem of the institute.
15. College has a strict view towards safety of girl students in the campus. Any verbal/non verbal indecent conduct, physical contact or derogatory act against girls/women will not be tolerated. Any action corresponding to harassment/discrimination/intimidation against girls/women, will be liable for severe punishment.

Disciplinary actions that will be taken against students engaged in undesirable activity

- 1) **Warning**
 - a) The student involved in any objectionable behavior will be issued a warning letter.
 - b) The parents/legal guardians of the student will be called for information and discussion regarding the misconduct. An undertaking in this regard will be sought from the parents/legal guardians.
- 2) **Submission of Apology**

Any student found guilty, will be asked to tender an apology for his/her misconduct, stating that, he/she will not indulge in such activity in future.

3) **Restitution**

It relates to the recovery or reimbursement in terms of money, to compensate for personal injury/ loss, damage/disfiguration of property of the institute or any other property kept in the institute.

Students/group of students would be asked to compensate for the loss, due to any act of destruction inflicted by the students.

4) **Suspension**

A student/group of students may be suspended from attending the classes. The student shall lose his/her attendance for the suspended period

5) **Forfeiture**

Caution money deposit of student involved in inappropriate behavior shall be forfeited.

6) **Expulsion**

This is the final and radical disciplinary action which shall be exercised only in cases where stern action is inevitable. This will result in the permanent dismissal of a student from the Institute. Such a student will not be eligible for readmission to any of the courses of this institute thereafter.

13. INSTITUTIONAL CORE VALUES

- 1) **Ethics:-** We, at KDKCE, provide a learning environment that develops responsible, moral and Integrated behavior, respecting the dignity of the members of society. The Academic activities are solely governed through the prescribed norms and guidelines of statutory authority. The technical papers presented and published are referred through plagiarism software.
- 2) **Integrity:-** We conduct activities that make us look into our work holistically. We adopt practices that are fair, honest and unprejudiced towards students, staff and stakeholders.
- 3) **Service:-** We strive for the genuine well being of our student by harnessing our abilities to deliver the curriculum and other essential services and respond to inquiries and requests from the stakeholders in appropriate and timely manner.
- 4) **Quality:-** We provide quality education by utilizing our intellect, social, physical and ethical abilities. We also plan and prepare programs that lead to acquisition of knowledge and skills necessary to achieve information for career advancement, personal enrichment, leadership

and service to the society. The technical education imparted caters for individual and social responsibility which is the indicator of success.