Sr. No.	Department of Information Technology	
	Third Semester	
1	BEIT301T	Applied Mathematics-III
2	BEIT302T	Programming Logic and Design using ‘C’
3	BEIT302P	Programming Logic and Design using 'C'
4	BEIT303T	Ethics in Information Technology
5	BEIT304T	Digital Electronics and Fundamentals of Microprocessor
6	BEIT304P	Digital Electronics and Fundamentals of Microprocessor
7	BEIT305T	Data Communication
8	BEIT306T	Environmental Engineering
9	BEIT307P	Computer Lab-I
	Fourth Semester	
1	BEIT401T	Discrete Mathematics and Graph Theory
2	BEIT402T	Algorithms and Data Structures
3	BEIT402P	Algorithms and Data Structures
4	BEIT403T	Theory of Computation
5	BEIT404T	Computer Architecture and Organization
5	BEIT405T	Object Oriented Methodology
6	BEIT405P	Object Oriented Methodology
7	BEIT406P	Computer Lab-II
	Fifth Semester	
1	BEIT501T	System Programming
2	BEIT502T	Design and Analysis of Algorithms
3	BEIT503T	Software Engineering
4	BEIT503P	Software Engineering
5	BEIT504T	Computer Graphics
6	BEIT504P	Computer Graphics
7	BEIT505T	Java Programming
8	BEIT505P	Java Programming
9	BEIT506T	Industrial Economics and Entrepreneurship Development
	Sixth Semester	
1	BEIT601T	Computer Networks
2	BEIT602T	Operating Systems
3	BEIT603T	Database Management Systems
4	BEIT603P	Database Management Systems
5	BEIT604T	Internet Programming
6	BEIT604P	Internet Programming
7	BEIT605T	Functional English
8	BEIT606P	Mini Project and Industrial Visit
	Seventh Semester	
1	BEIT701T	Data Warehousing and Mining
2	BEIT701P	Data Warehousing and Mining
3	BEIT702T	Computer System Security
4	BEIT702P	Computer System Security
5	BEIT703T	Artificial Intelligence
6	BEIT704T2	Elective-I Multimedia Systems

7	BEIT704T4	Elective-I Compiler Design
8	BEIT705T2	Elective-II Cluster and Grid Computing
9	BEIT706P	Seminar on Project
	Eighth Semester	
1	BEIT801T	Distributed Systems
2	BEIT801P	Distributed Systems
3	BEIT802T	Gaming Architecture and Programming
4	BEIT802P	Gaming Architecture and Programming
5	BEI803T3	Elective-III Pattern Recognition
6	BEIT804T4	Elective-IV Wireless Sensor Networks
7	BEIT805P	Project

Department of Information Technology

The department of Information Technology has framed the following Program Specific Outcomes in consultation with concerned stakeholder and corresponding committees.

PSO1	An ability to define a problem, design an algorithm for it, identify input and
PSO2	Able to implement computer skills in the even related to software engineering,

BE Information Technology Third Semester	
	Applied Mathematics-III (BEIT301T)
CO301.1	Having studied this course, student will have the ability to solve integral equation, integro-differential equations, convolution type integrals,
CO301.2	Students will have a critical understanding of the methods for evaluation of integrals which provides the solution of numerous boundary value problems
CO301.3	Students will attain considerable level of competence in being able to analyze the frequency response and representation of discrete time system in
CO301.4	Students will be able to simplify the power of matrices, system of linear
CO301.5	Students will develop a deep understanding of laws of probability, discrete and
CO301.6	Students will be able to use the significant numbers of single random variable, two random variables and more than two random variables to make
	Programming Logic and Design using 'C' (BEIT302T)
CO302.1	Understand the process of problem solving using computer system.
CO302.2	Able to design a problem solution using algorithmic approach.
CO302.3	Understands the usage of pointers and parameter passing mechanisms.
CO302.4	Understand the purpose of functions and usage of function libraries.
CO302.5	Able to develop small real life applications using structures, files and graphic
CO302.6	Understand the concepts of ROM BIOS and TSR concepts.
	Programming Logic and Design using 'C' (BEIT302P)
CO302.1	Able to implement basic operations using operators and control structures.
CO302.2	Able to implement the concept of functions and arrays on various scenarios.
CO302.3	Able to develop basic file and graphic operations.
	Ethics in Information Technology (BEIT303T)
CO303.1	Understanding the concept of Ethical Hacking to avoid or prevent cybercrimes.
CO303.2	Understanding the need of Ethics in business, IT professionals and IT users.
CO303.3	Understanding the issues of cybercrime and knowing the importance of data

CO303.4	Understanding the concepts of Software Engineering for better management of
CO303.5	Understanding the importance of intellectual property.
CO303.6	The importance of Information Technology and its application in Real World will
	Digital Electronics and Fundamentals of Microprocessor (BEIT304T)
CO304.1	Students will be able to understand the advantages of digital system over analog system also they can examine the structure of various number systems and
CO304.2	Students will be able to use Boolean algebra and Karnaugh's map for reducing
CO304.3	Students will be able to understand, analyze and design various arithmetic and
CO304.4	Students will be able to study the basics for constructing memory and will design
CO304.5	Students will be able to describe the architecture and comprehend the instruction
CO304.6	Students will be able to illustrate the use of interrupts and apply the principles of assembly language programming in developing microprocessor
	Digital Electronics and Fundamentals of Microprocessor (BEIT304P)
CO304.1	Become familiar with basic logic gates and understand Boolean algebra and simpl
CO304.2	Ability to Identify and describe flip-flop circuits, counter, design of
CO304.3	Introduction to the Architecture and programming of the microprocessor 8085.
	Data Communication (BEIT305T)
CO305.1	Understand the basic concepts data communication and learn how the data is
CO305.2	Understand the knowledge of different protocols at different layers of models.
CO305.3	Able to get depth knowledge of physical layer fundamentals. Describe the
CO305.4	Understand the general principles of circuit and packet switching and conversion
CO305.5	Understand various guided and unguided media to have communication over
CO305.6	Able to get various hardware devices used in networking along with different
	Environmental Engineering (BEIT306T)
CO306.1	Introductory part for the public awareness and social understanding about our
CO306.2	Scientific approach on Importance of energy and reutilization of resources for the
CO306.3	Concept of ecosystems, energy flow, food chains, gives complete awareness

CO306.4	Gives Idea about Flora and fauna, wildlife in country, various habitat and value
CO306.5	Various types of pollutions, related activities, natural and manmade, its cure, solid waste management and explains roll of individual for prevention
CO306.6	It addresses the social issues like sustainable- unsustainable developments, prevention of resources for future generations, environmental ethics,
CO306.7	Awareness about Global population growth, human health, AIDS, Human rights along with its scope. Include field visit and observations of various
	Computer Lab-I (BEIT307P)
CO307.1	Learning of various I/O devices, Network accessories, touch screens, i-series
CO307.2	Learning of installation and working of windows operating system, Ubuntu and
CO307.3	Learning DOS commands ,batch programming, web page creation using HTML
BE Information Technology Fourth Semester	
	Discrete Mathematics and Graph Theory (BEIT401T)
CO401.1	After going through this course, students will understand the concept and language of sets, which plays an important role in expressing mathematical ideas as well as concepts of logic theory, which is used to verify correctness
CO401.2	Students will be able to understand the concepts of relation and function and their
CO401.3	Students will be able to understand the statement of group, types of groups and
CO401.4	Students will be able to use a combination of theatrical knowledge and independent mathematical thinking to investigate questions of ring theory and construct proofs and simplify Boolean expression, logical operations, truth
CO401.5	Students will understand the basic concepts of graphs, directed graphs, weighted graphs and able to present a graph by matrix. Also understand the properties
CO401.6	Students will be able to use basic counting techniques and generating function to
	Algorithms and Data Structures (BEIT402T)
CO402.1	To understand to choose appropriate data structure as applied to specified
CO402.2	To understand use linear data structures like stacks, queues.
CO402.3	To understand concepts and implementation of Linked list.
CO402.4	To understand storing of data in the form of Tree and its implementation.
CO402.5	To understand concepts and to handle operations like searching, insertion,
CO402.6	To understand to handle different searching, sorting techniques and method

	storing the data using hash value through hashing techniques.
	Algorithms and Data Structures (BEIT402P)
CO402.1	Students can able to create stacks, queue and to perform various operations on
CO402.2	Students able to create linked list and to perform various operations on them.
CO402.3	Students can able to implement various searching and sorting techniques,
	Theory of Computation (BEIT403T)
CO403.1	Analyze and design finite automata, pushdown automata, Turing machines,
CO403.2	Demonstrate the understanding of key notions, such as algorithm, computability,
CO403.3	Prove the basic results of the Theory of Computation.
CO403.4	State and explain the relevance of the Church-Turing thesis.
CO403.5	Be familiar with thinking analytically and intuitively for problem - solving
CO403.6	Demonstrate advanced knowledge of formal computation and its relationship to
	Computer Architecture and Organization (BEIT404T)
CO404.1	Understand the major components and usage of the computer system.
CO404.2	Understand the organization of control unit, arithmetic logic unit, memory unit
CO404.3	Able to implement basic programs in assembly language.
CO404.4	Understand the instruction level execution at micro level.
CO404.5	Understand the operation of the arithmetic unit and implementation of fixed-
CO404.6	Understand the study of hierarchical memory system including cache and virtual
	Object Oriented Methodology (BEIT405T)
CO405.1	To understand the basic concepts of Object Oriented Methodology and models.
CO405.2	To understand the Dynamic modeling, Functional modeling and their
CO405.3	To understand the Object modeling, Dynamic modeling and their phases.
CO405.4	To understand the concepts of System Design and this stages.
CO405.5	To understand the concepts of Object Design and its phases.
CO405.6	To understand the concepts of the Object Oriented Styles.
	Object Oriented Methodology (BEIT405P)
CO405.1	To understand the structure of C++ program.
CO405.2	To study and implement various object oriented features.
CO405.3	To implement a real world problem using object oriented features.
	Computer Lab-II (BEIT406P)
CO406.1	Install Linux OS, study its basic commands and write programs based on shell
CO406.2	To understand how to store and maintain data in Access and Oracle Database.

CO406.3	To Study Python and MATLAB Programming and it's various features
BE Information Technology Fifth Semester	
	System Programming (BEIT501T)
CO501.1	Understanding on how to write assembly language program and differentiate between machine-ops and pseudo-ops able to process them if present in
CO501.2	Understanding on General machine structure, its function of components and
CO501.3	Able to understand working of assemble and different tables generated by
CO501.4	To have clear idea about the number of phases of compiler and role of each
CO501.5	Understanding on function of loader and types. Also, advantages and disadvantages of different types of loaders and able to generate ESD cards,
CO501.6	Better understanding on macro processor, table generation by macro processor and working, installation of device driver and understanding of various types
	Design and Analysis of Algorithms (BEIT502T)
CO502.1	Argue the correctness of algorithms using recurrence relation.
CO502.2	Analyze worst-case running times of algorithms using asymptotic analysis. Explain what amortized running time is and what it is good for. Describe the different methods of amortized analysis (aggregate analysis, accounting,
CO502.3	To understand the divide-and-conquer paradigm and explain when an algorithmic design situation calls for it. Synthesize divide-and-conquer algorithms. Describe the greedy paradigm and explain when an algorithmic design situation
CO502.4	To understand the dynamic-programming paradigm and explain when an algorithmic design situation calls for it. Synthesize dynamic-
CO502.5	Explain what an approximation algorithm is, and the benefit of using
CO502.6	Analyze the approximation factor of an algorithm. Analyze NP-hard and NP-
	Software Engineering (BEIT503T)
CO503.1	Plan and deliver an effective software engineering process, based on knowledge
CO503.2	Employ group working skills including general organization, planning and time
CO503.3	Capture, document and analyze requirements.
CO503.4	Make effective use of UML, along with design strategies such as defining
CO503.5	Formulate a testing strategy for a software system, employing techniques such as
CO503.6	Understand the process of risk management, change management, evaluate

	quality of the requirements, analysis and design work done during the module
	Software Engineering (BEIT503P)
CO503.1	Students shall be able to get exposure of Rational Rose software.
CO503.2	Students shall be to understand Software requirement specification (SRS).
CO503.3	Students can able to design all diagrams during software project development.
	Computer Graphics (BEIT504T)
CO504.1	To understand the basic concepts of graphics and algorithms to draw line, circle
CO504.2	To understand 2D transformation and algorithms to fill a polygon.
CO504.3	To understand the segment tables and various algorithms for polygon clipping.
CO504.4	To understand 3D transformations and algorithms for removal of hidden surfaces
CO504.5	To understand the curves and surface rendering algorithms.
CO504.6	To understand the various color models and their applications, steps involved in
	Computer Graphics (BEIT504P)
CO504.1	To learn various graphics primitives and its applications.
CO504.2	To understand and implement various algorithms for line and circle generation,
CO504.3	To understand and implement 2D, 3D transformations and animations.
	Java Programming (BEIT505T)
CO505.1	To understand about data types, operators, classes and objects, where object
CO505.2	To understand about the vectors and generics with the String, String Buffer and
CO505.3	To understand about object classes, packages and various exception handling
CO505.4	To understand the multithreading concept with their life cycle.
CO505.5	To understand about file system where reading, writing by using transient or
CO505.6	To understand about java applet application used for creating user interface with
	Java Programming (BEIT505P)
CO505.1	To learn the object oriented programming language and its application.
CO505.2	To understand the use of applets in creating the web sites.
CO505.3	To understand the concept of packages in solving the real world problems.
	Industrial Economics and Entrepreneurship Development (BEIT506T)
CO506.1	Subject makes the student understand and learn the basic concepts of Industrial Economics such as types of business structures, top and bottom line
CO506.2	Students learn the basic concepts like market structures, pricing strategies, business integration, economies and diseconomies of scale and the new

CO506.3	Students are familiarized with working of banking system, foreign direct investment, the concept of free trade, capital formation, inflation,
CO506.4	Students learn about entrepreneurship as career avenue and factors affecting entrepreneurial growth. Students learn about project formulation, market
CO506.5	Subject enhances their understanding about needs and sources of finance, various types of loans, capital structures, break even analysis, network
CO506.6	Students learn about role of small scale industries in the economy, problems of SSI,FDI as a threat to SSI, technical consultancy organizations,
BE Information Technology Sixth Semester	
	Computer Networks (BEIT601T)
CO601.1	To understand about computer networks and internet, with layered architecture of
CO601.2	To understand about data link layer where using error correcting or detecting
CO601.3	To understand the importance of network layered in OSI and TCP/IP model, also
CO601.4	To understand the role of transport and application layered, with client-server
CO601.5	To understand the various servers are used to resolve the problems of internet.
CO601.6	To understand the mobile IP with their addressing, also various techniques are
	Operating Systems (BEIT602T)
CO602.1	To make students able to learn different types of operating systems along with
CO602.2	To understanding file system interface and implementation, disk management.
CO602.3	Understand and analyse theory and implementation of various process
CO602.4	Understand and analyse concepts of memory management including virtual memory. Compare and contrast paging and contiguous blocks in
CO602.5	Able to Compare and contrast semaphores and mutex locks.
CO602.6	To provide students' knowledge of memory management and deadlock handling
	Database Management Systems (BEIT603T)
CO603.1	Understand database concepts and structures and terms related to database design
CO603.2	Understand the objectives of using data, information system, data modeling and
CO603.3	Able to construct, normalize conceptual data models and able to develop logical
CO603.4	Implement a relational database into database management system using SQL

CO603.5	Students become proficient in using database query language such as SQL.
CO603.6	Understand the issues related to database performance.
	Database Management Systems (BEIT603P)
CO603.1	One will able to understand the data and creation of data base and tables inside
CO603.2	One will able to write the queries using DDL and DML and execute the same
CO603.3	One will able to perform aggregate functions and advanced operations on created
	Internet Programming (BEIT604T)
CO604.1	To learn how the CSS is implemented.
CO604.2	To create dynamically generated web pages based on DHTML. To learn how to
CO604.3	To learn processing of XML and how to use its elements.
CO604.4	Learn the Servlet programming for distributed enterprise application
CO604.5	Learn the Java Server Pages programming for distributed enterprise application
CO604.6	Learn how to develop basic android application with all details.
	Internet Programming (BEIT604P)
CO604.1	Students can able to create and develop HTML/DHTML/XHTML pages with
CO604.2	Students can able to create XML files with required specifications and also
CO604.3	Students can able to create and develop server side JSP's and also can be able to
	Functional English (BEIT605T)
CO605.1	will become adept in using functional grammar
CO605.2	would be able to write at workplaces
CO605.3	will be able to draft technical reports and write proposals
CO605.4	will be able to understand the planning and procedure of carrying out research
CO605.5	will become well prepared to face competitive examinations and job interviews
CO605.6	dexterous in presentation skills
	Mini Project and Industrial Visit (BEIT606P)
CO606.1	Able to acquire practical knowledge within the chosen area of technology for
CO606.2	Able to identify, analyze, formulate and handle programming objects with
CO606.3	Able to develop a design solution for a set of requirements
CO606.4	Able to express technical ideas, strategies and methodologies in written form and
CO606.5	Able to contribute as an individual or in a team in development of technical

CO606.6	Develop effective communication skills for presentation of project related
BE Information Technology Seventh Semester	
	Data Warehousing and Mining(BEIT701T)
CO701.1	Students should get the knowledge of data preprocessing for data warehouse and
CO701.2	Students will be able to understanding of the fundamental theories and concepts
CO701.3	Students can understand online analytic processing (OLAP) is used for business
CO701.4	Students should get the knowledge of data mining functionalities and
CO701.5	Students can be able to work on association rule mining for market basket
CO701.6	Students should get the knowledge of business intelligence used in business from
	Data Warehousing and Mining (BEIT701P)
CO701.1	Students can able to design and perform data warehouse schemas and online
CO701.2	Students can able to perform data mining techniques such as classification,
CO701.3	Students can able to install Hadoop single node cluster and its commands.
	Computer System Security (BEIT702T)
CO702.1	Students can understand security concepts, Ethics in Network Security.
CO702.2	Students can understand security services and mechanisms and can implement
CO702.3	Students can comprehend and apply relevant cryptographic techniques like RSA
CO702.4	Students can comprehend various authentication services and mechanisms like
CO702.5	Students can understand email security services and mechanisms like PGP,
CO702.6	Students can understand meaning of virus, worms, and firewalls and different
	Computer System Security (BEIT702P)
CO702.1	Able to implement the concept of encryption and decryption using various
CO702.2	Able to implement the concept of encryption and decryption using various
CO702.3	Able to implement the concept of various authentication and digital signature
	Artificial Intelligence (BEIT703T)
CO703.1	To understand the basic concepts of Artificial Intelligence, AI techniques and AI

CO703.2	To understand concept of Informed and Uninformed search strategies.
CO703.3	To understand issues, approaches of knowledge representation and logical form
CO703.4	To understand different representations scheme of knowledge in knowledge
CO703.5	To understand the different development phases of expert system and rule based
CO703.6	To understand concepts of certainty, uncertainty factors and fuzzy logic.
	Elective-I Multimedia Systems (BEIT704T2)
CO704.1	Students will gain the knowledge on different technologies and architecture of
CO704.2	Students will understand the concepts of multimedia tools
CO704.3	Students able to know various elements of multimedia
CO704.4	Students will able to apply image and video compression in mini real-time
CO704.5	Students will get the concepts of Storage models and Access Techniques of
CO704.6	Students will get the concepts of developing multimedia applications and
	Elective-I Compiler Design (BEIT704T4)
CO704.1	To acquire the knowledge of modern compiler and its features.
CO704.2	To learn and use the new tools and technologies used for designing a compiler
CO704.3	Demonstrate the phases of the compilation process and be able to describe the
CO704.4	Proficiently explain the aspects of theoretical computer science including
CO704.5	Providing the student with skills and knowledge (such as lexical analysis and parsing) which are applicable to a broad range of computer science
CO704.6	To learn new code optimization techniques to improve the performance of
	Elective-II Cluster and Grid Computing (BEIT705T2)
CO705.1	Understanding the basic requirement of evolution of Grid from a Cluster.
CO705.2	Be familiar with the fundamental components of Grid environments, such as
CO705.3	Be able to design and implement Grid computing applications using Globus or
CO705.4	Be able to justify the applicability, or non-applicability of Grid technologies for a
CO705.5	Understand the suitable topology and design to set up an initial grid for research
CO705.6	Know what a grid is and what it can do for whom uses it is essential when planning to use this technology to tackle the most demanding

	Seminar on Project (BEIT706P)
CO706.1	Able to improve oral and presentation skills in their project domain.
CO706.2	Able to apply mathematics and scientific method in computational problems
CO706.3	Able to use latest tools and methods in the computing practice
CO706.4	Gains knowledge on the process involved in team work of computing
CO706.5	Able to design and implement systems on the various social needs.
CO706.6	Understand the importance of various process models of the project
BE Information Technology Eighth Semester	
	Distributed Systems (BEIT801T)
CO801.1	Students will gain the models of distributed systems which help in developing
CO801.2	Students will understand the concepts of Inter process communication using RPC
CO801.3	Students will know how the processes are synchronized in distributed systems.
CO801.4	Students will know how the deadlocks are occurred, detected and resolved in
CO801.5	Students will gain the knowledge about how the data is shared in distributed
CO801.6	Students will know the structure of file systems in distributed systems.
	Distributed Systems (BEIT801P)
CO801.1	Students will able to create communication between systems.
CO801.2	Students will able to migrate the code from one system to another.
CO801.3	Students can implement synchronization between the systems with respect to
	Gaming Architecture and Programming (BEIT802T)
CO802.1	Design, analyze, implement and evaluate computer games.
CO802.2	Appreciate computer games designs and complexities.
CO802.3	Demonstrate understanding of game production process through developing a
CO802.4	Demonstrate understanding of technical components in realizing a 2D and 3D
CO802.5	Collaborate, organize and communicate with others in effective team work.
CO802.6	Realize the interdisciplinary nature in computer games development and appreciate importance of collaboration, be creative and critical to game and
	Gaming Architecture and Programming (BEIT802P)
CO802.1	Students are able to design and implement the basic concept of game using unity
CO802.2	Students are able to implement the animation concept of game.
CO803.3	Students are able to implement, integrate and test the game with animation,

	Elective-III Pattern Recognition (BEI803T3)
CO803.1	Students can understand pattern, pattern classifier and pattern recognition with
CO803.2	Students should get the knowledge of Bayes theorem and usefulness in pattern
CO803.3	Students can understand clustering and different clustering techniques.
CO803.4	Students can understand feature extraction process with KL transform in pattern
CO803.5	Students able to use hidden markov model and support vector machine in pattern
CO803.6	Students can understand the concepts of fuzzy logic and genetic algorithm in
	Elective-IV Wireless Sensor Networks (BEIT804T4)
CO804.1	Introduce students to the characteristics, challenges, standards and applications of
CO804.2	To provide the knowledge of architecture and structure of wireless sensor
CO804.3	Provide the depth knowledge of contention based and contention free MAC
CO804.4	To understand the general principles of routing and its challenges. To make them
CO804.5	To understand security concepts in WSN using Message authentication code,
CO804.6	Make the students aware of network management design issues, operating system
	Project (BEIT805P)
CO805.1	Able to develop applications in real life.
CO805.2	Able to identify, analyze, formulate and handle programming projects with a
CO805.3	They can acquire practical knowledge within the chosen area of technology for
CO805.4	They can learn new tools, algorithms, and/or techniques that contribute to the
CO805.5	Able to test the functionalities of the project by different testing methodologies. And they can improve effective communication skills for presentation of project related activities.
CO805.6	They can express technical ideas, strategies and methodologies in written form.