

**K.D.K. College of Engineering, Nagpur**  
**Department of Computer Science & Engineering**  
**Session 2019-20**



<b>Course Outcomes</b>	
<b>Third Semester</b>	
<b>BECT201T</b>	<b>Mathematics-III</b>
CO201T.1	1. Student can identify Laplace transforms & inverse Laplace transforms for solving Engineering Problems.
CO201T.2	2. Students apply Fourier series representation of a periodic function for solving engineering Problems.
CO201T.3	3. Student are capable to find the Z- Transform, inverse Z- Transforms to solve problems in various branches of Engineering.
CO201T.4	4. Student understands analytic function of a complex variable and are able to apply its knowledge to solve contour integrations.
CO201T.5	5. Student can determine Eigen values, eigenvectors and solution of linear differential equation using matrix method
CO201T.7	6. One can obtain random variables corresponding to random experiments; Specify probability density and cumulative distribution functions.
<b>BECT202T</b>	<b>Program Logic Design in “C”</b>
CO202T.1	1. Understand concept of arrays, string handling, concept of handling variable data types using structures, building functions.
CO202T.2	2. Understand concept of file, file handling programs, study various file handling functions.
CO202T.3	3. Able to build programs using pointer. Concept of memory allocation & using various DMA functions.
CO202T.4	4. To build graphic functions & Drawing images on the console by using various graphic functions.
CO202T.5	5. To acquire basic knowledge of mathematical modeling & model of computation.
CO202T.6	6. Design C language program for read and write file operations.
<b>BECT202P</b>	<b>Program Logic Design in ‘C’ -Lab</b>
CO202P.1	1. Get a fundamental understanding of Program Logic design in "C".
CO202P.2	2. Apply concept of Arrays and Structures.
CO202P.3	3. Apply the concept of Files and pointers.
CO202P.4	4. Design using C Graphics.
<b>BECT203T</b>	<b>Digital Circuits &amp; Microprocessor</b>
CO203T.1	1. To acquire basic knowledge about digital electronics and solving problems related to number systems and Boolean algebra.
CO203T.2	2. To identify, analyze and design of various combinational circuits.
CO203T.3	3. To be able to design various synchronous and asynchronous sequential circuits.
CO203T.4	4. To acquire basic knowledge about Microprocessors and its need.

CO203T.5	5. To be able to understand the internal structure and interfacing of different peripheral devices with 8085 Microprocessor.
CO203T.6	6. To be able to understand the various instructions and programming using 8085 microprocessor.
<b>BECT203P:</b>	<b>Digital Circuits &amp; Microprocessor lab</b>
CO203P.1	1. Understand the fundamental of basic logic gates and their use in combinational and sequential circuits
CO203P.2	2. Understand the use of digital components as switching elements.
CO203P.3	3. Be able to generate basic arithmetic and logic circuits required in microcomputer system
CO203P.4	4. Develop assembly language programs.
<b>BECT204T</b>	<b>Social and Ethical aspects of IT</b>
CO204T.1	1. Get fundamental Understanding and the role of ethics and its uses for IT user IT professionals, Business world.
CO204T.2	2. Understand the essential issues related to information security & to take precautions and use techniques and tools to defend against computer crimes.
CO204T.3	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.
CO204T.4	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.
CO204T.5	5. Understand the core IT concepts of current and emerging technologies and learn to apply appropriate technologies to a tasks.
CO204T.6	6. Ability to communicate, creates, and collaborate effectively using state-of-the-art information technologies in multiple modalities.
<b>BECSE205T:</b>	<b>Computer Architecture &amp; Organization</b>
CO205T.1	1. To Describe the Basic Structure of Computer Hardware and Software, Bus Structures, Memory Locations and Addresses and Machine Programming Addressing.
CO205T.2	2. To study Instruction Sets High Level Language consideration, IBM-370 and execution of Instructions.
CO205T.3	3. It aims to study Microinstructions, micro program sequencing, perfecting microinstruction and Emulation.
CO205T.4	4. How to represent number system, and to perform addition, subtraction, multiplication and division on signed and unsigned number.
CO205T.5	5. To study Memories like Semiconductor RAM Memories, Semiconductor ROM Memories, Multiple Module Memories, Cache Memories, virtual Memories and Memory Management.
CO205T.6	6. Identify the different architectural and organizational design issues that can affect the performance of a computer such as instruction set design.

<b>BECT206P</b>	<b>COMPUTER WORKSHOP-1 LAB</b>
CO206P.1	1. Get a fundamental understanding of Hyper Text Markup Language and apply the concepts of basic H.T.M.L code structure.
CO206P.2	2. Designing the concepts for creation of H.T.M.L page using various tags.
CO206P.3	3. Validating the data using Java script.
CO206P.4	4. Implementation of list tag, marquee tag, href tag, frame tag, form tag and designing of small website using tags.
<b>BECT207T</b>	<b>BECSE207T: Environmental Engineering</b>
CO207T.1	1.Students will understand the importance and become aware of the upcoming environmental issues.
CO207T.2	2.Students will understand the importance of natural resources and can work for their conservation.
CO207T.3	3. Students will gain knowledge about the various ecosystems existing in nature and their importance for conservation of nature.
CO207T.4	4.Student will learn about the biodiversity at local, national and global levels and the importance of wild life conservation.
CO207T.5	5.Students will gain knowledge about different types of environmental pollution, their effects and control of pollution for the benefit of mankind.
CO207T.6	6.Students will learn the social issues through various Acts under the constitutional provisions.
<b>Fourth Semester</b>	
<b>BECT208T</b>	<b>Discrete mathematics &amp; graph Theory</b>
CO208T.1	1. Students will be able to describe several areas of mathematics beyond calculus, express their interest.
CO208T.2	2. Students will be able to compute the Cartesian product of sets. Draw the graphs of various types of relations.
CO208T.3	3. The study of group theory aims to introduce students to some more sophisticated part of general advanced mathematics.
CO208T.4	4. To know concepts from the theory of rings, fields, Lattice and Boolean algebra for the essentials of mathematics.
CO208T.5	5. Students will be able to model and solve real-world problems using graphs and trees, both quantitatively and qualitatively.
CO208T.6	6. Students will be able to apply diverse counting strategies to solve various problems involving strings, combinations, distributions, partitions.
<b>BECT209T</b>	<b>Data Structures &amp; Program Design</b>
CO209T.1	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.
CO209T.2	2. Implement the basic and advance concepts of stacks and queues through programming. Describe the concept of recursion, and its implementation using a stack.
CO209T.3	3 Apply the concepts of Linked list on various problems and implement it.
CO209T.4	4. Understand and apply fundamental algorithmic problems including Tree traversals, height balanced, weight balanced and AVL trees.

CO209T.5	5. Implement various searching techniques on graphs and shortest paths algorithms.
CO209T.6	6. Design and implement concepts of files including hash tables and collision handling techniques.
<b>BECT209P</b>	<b>Data Structures &amp; Program Design Lab:</b>
CO209P.1	1. Student will be able to handle operations like searching, insertion, deletion, traversing mechanism etc. on various data structures.
CO209P.2	2. Students will be able to use linear and non-linear data structures like stacks, queues, linked list etc.
CO209P.3	3. Student will be able to choose appropriate data structure as applied to specified problem definition.
CO209P.4	4. Students will be able to use algorithmic foundations for solving problems and programming.
<b>BECT210T</b>	<b>Advance Microprocessor and Interfacing</b>
CO210T.1	1. Understand the basic knowledge of the architecture and operation of microprocessors and microcontroller.
CO210T.2	2. Understanding of assembly language programming techniques.
CO210T.3	3. Analyze the reason behind the cost of executing instructions in terms of time and space in simple programs.
CO210T.4	4. Understanding of interfacing and I/O techniques used in microprocessors and microcontrollers.
CO210T.5	5. Understand techniques for faster execution of instructions and improve speed of operation and performance of microprocessors.
CO210T.6	6. Understand RISC and CISC based microprocessors & core processors.
<b>BECT210P</b>	<b>Advance Microprocessor and Interfacing Lab:</b>
CO210P.1	1. Apply the programming techniques in designing simple assembly language programs for solving simple problems by using instruction sets of microprocessors
CO210P.2	2. Students should be able to design and implement microprocessor-based systems.
CO210P.3	3. Students should be able to use an Integrated Development Environment (IDE) as a modern software tool for embedded system development.
<b>BECT211T</b>	<b>Theory of Computation</b>
CO211T.1	1. Apply principles of fundamental and computational mathematics to the field of computer engineering
CO211T.2	2. Design finite automata to recognize a given regular language.
CO211T.3	3. Transform a language into regular expression or finite automata or Transition graph.
CO211T.4	4. Define relationship between regular language and context free Grammar. Building a context free grammar for push down automata.
CO211T.5	5. Design Turing machine and post machine for a given language.
CO211T.6	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.
<b>BECT212T:</b>	<b>Introduction to Main-Frame Languages</b>
CO212T.1	1. Should be able to understand Mainframe computer architecture.
CO212T.2	2. Should be able to understand Z/OS operating system functionality.
CO212T.3	3. Should be able to write JCL programming for JOB processing.

CO212T.4	4. Should be able to Understand the COBOL programming structure.
CO212T.5	5 Should able to understand COBOL, DB2 and JCL programming language.
CO212T.6	6 Should able to understand relation between COBOL, DB2 and JCL.
<b>BECT213P:</b>	<b>COMPUTER WORKSHOP – 2 LAB</b>
CO213P.1	1.Should be able to understand concept linux OS.
CO213P.2	2.Should be able to execute linux command.
CO213P.3	3. Should be able to design shell script program.
CO213P.4	4.Design shell script program using loop control and decision control statement.
<b>Fifth Semester</b>	
<b>BECT301T</b>	<b>Object Oriented Modeling</b>
CO301T.1	1. To learn the concept of Object-Oriented Software Development Process.
CO301T.2	2. To understand the basic Structural modeling and create the class and object diagram, Collaboration diagram.
CO301T.3	3.To Understand the basic Behavioural Modelling by using Use case diagram, Activity Diagram, State diagram, Time diagram, Dataflow diagram, Sequence diagram, ER Diagram.
CO301T.4	4. To learn the concept of Architectural Modelling which include deployment diagram, Component diagram.
CO301T.5	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.
CO301T.6	6. To understand the Architecture-Centric Process, steps of architecture and an architecture description.
<b>BECT301P</b>	<b>Object Oriented Modeling-Lab</b>
CO301P.1	1.Be able to understand the difference between object-oriented programming and procedural oriented language and data types in C++.
CO301P.2	2.To prepare object-oriented design for small/medium scale problems.
CO301P.3	3.To understand the role of inheritance, polymorphism, dynamic binding and generic structures in building reusable code.
CO301P.4	4.Able to program using C++ features such as composition of objects, operator overloads, dynamic memory allocation, inheritance and polymorphism, file I/Exception handling, etc.
<b>BECT302T</b>	<b>Database Management System</b>
CO302T.1	1.Explore the various models of DBMS and levels in the architecture of DBMS.
CO302T.2	2. Relate the problems in day-to-day life by implementing the Entity relationship model and understanding queries in terms of relational algebra.
CO302T.3	3.Understand complex queries using PL/SQL also techniques to improve performance of database.
CO302T.4	4.Understand the various database optimization techniques to serve the industry in more efficient way.
CO302T.5	5.Face and resolve the crash in database system.

CO302T.6	6. Apply various database recovery techniques also understands various databases.
<b>BECT302P</b>	<b>Database Management System-Lab</b>
CO302P.1	1. Learning a systematic way of describing and defining a business process of Entity relationship model and understands various components of it.
CO302P.2	2. Implementation of various queries in SQL.
CO302P.3	3. Understand and execute complex queries using PL/SQL.
<b>BECT303T</b>	<b>Operating System</b>
CO303T.1	1. Understand the Functions of Operating System, Types of Operating System, Process concept, Process State, Work on WINDOWS Server & LINUX.
CO303T.2	2. Compare and Contrast the various scheduling algorithms.
CO303T.3	3. Understand the concept of Deadlock Prevention, Avoidance, Detection and Recovery, Context switch, Threads Overview, Multithreading Models, Threading issues.
CO303T.4	4. Analyze how to manage the memory by using Paging and Segmentation and analysis of virtual memory management.
CO303T.5	5. Understand the concept of file system, I/O system, Disk Space management, Kernel on LINUX based System.
CO303T.6	6. Understand the concept of Disk Management, RAID Structure, and Swap-Space Management.
<b>BECT303P</b>	<b>Operating system-Lab</b>
CO303P.1	1. Practical implementation of Process concept, scheduling algorithms.
CO303P.2	2. To implement demand paging using FIFO method, strings using LRU method.
CO303P.3	3. Implementation of virtual memory management, producer and consumer processes using semaphore.
CO303P.4	4. Apply knowledge for implementation of MVT (Multiprogramming with a Variable number of Tasks) and MFT (Multiprogramming with a fixed number of Tasks) memory management techniques.
<b>BECT304T</b>	<b>Design &amp; Analysis of Algorithm</b>
CO304T.1	1. Define the basic concept of algorithm and analyze the asymptotic performance of algorithms.
CO304T.2	2. Derive and solve recurrences describing the performance of divide and Conquer algorithms.
CO304T.3	3. Find optimal solution by applying greedy approach.
CO304T.4	4. Find optimal solution by applying dynamic approach, backtracking.
CO304T.5	5. Explain the major graph algorithms and their analyses and Differentiate Polynomial and non-polynomial problems.
CO304T.6	6. Can define the classes P and NP and explain the significance of NP-completeness.
<b>BECT304P</b>	<b>Design &amp; Analysis of Algorithm-Lab</b>
CO304P.1	1. Ability to design the algorithm using divide and conquer method
CO304P.2	2. Ability to apply the concept of Greedy Approach

CO304P.3	3. Ability to apply the concept of Dynamic programming
CO304P.4	4.Ability to apply the concept of backtracking.
<b>BECT305T</b>	<b>Data Communication</b>
CO305T.1	1.Recall fundamental concepts of Data Communication.
CO305T.2	2.Analyze the signal conversion methodologies.
CO305T.3	3.Illustrate communication media, frequency allocation & propagation of radio waves.
CO305T.4	4.Elaborate spread spectrum along with its services and various multiplexing schemes.
CO305T.5	5.Compare and contrast various Digitizing &Compression of multimedia.
CO305T.6	6. Analyze various encoding & compression schemes.
<b>Sixth Semester</b>	
<b>BECT306T</b>	<b>Computer Graphics</b>
CO306T.1	1.Understand the basic concepts and terminology used in computer Graphics.
CO306T.2	2.Understand the different transformations like Scaling, rotation, translation, rotation about arbitrary point, reflections, shearing.
CO306T.3	3. To learn about polygon filling techniques, various algorithms for scan conversion and filling of basic objects and their comparative analysis.
CO306T.4	4. To apply geometric transformations on graphics objects and their application in composite form and concept of viewport.
CO306T.5	5.Understand the concept of segmentation, windowing and clipping techniques and the different methods used for Curves and surfaces.
CO306T.6	6.Understand and use the different colour models , colour applications and Animation Techniques.
<b>BECT306P</b>	<b>Computer Graphics-Lab</b>
CO306P.1	1.Understand the foundations of computer graphics and concept of geometric, mathematical and algorithmic concepts.
CO306P.2	2. Write program functions to implement graphics primitives and create interactive graphics applications in C using one or more graphics application.
CO306P.3	3. Develop design drawing that demonstrate computer graphics and design skills.
CO306P.4	4. Understand the comprehension of windows, clipping and view-port object representation in relation to images displayed on screen.
<b>BECT307T</b>	<b>Computer Networks</b>
CO307T.1	1. Develop a fundamental understanding of network design principles and performance metrics.
CO307T.2	2. Understand the data link-layer concepts, protocols, and services and basic concepts of wired and wireless networks.
CO307T.3	3. Distinguish packet switching and circuit switching techniques.
CO307T.4	4. Understand different network interfaces and routing techniques for IP based networking infrastructure.

CO307T.5	5. Develop mechanisms for effective network management, congestion control and congestion avoidance in the internetwork.
CO307T.6	6. Apply the knowledge earned into various application-level services like email, www etc.
<b>BECT307P</b>	<b>Computer Networks-Lab</b>
CO307P.1	1. Simulate and then configure different types of networks.
CO307P.2	2. Implement error correction algorithm & framing.
CO307P.3	3. Implement error detection algorithm & sliding window protocols.
CO307P.4	4. Implement networking concepts like server, client & addressing mechanism with the help of language like java & routing algorithms & application layer protocols. Understand the fundamental of basic logic gates and their use in combinational and sequential circuits.
<b>BECT308T</b>	<b>Software Engg. &amp; Project Management</b>
CO308T.1	1. To gain Knowledge of software engineering methods, practices, process models and application.
CO308T.2	2. To gain Knowledge of software engineering Practices and Principles for various stages.
CO308T.3	3. To learn various Modelling Approaches and Design Goals. Further to understand how to map information into various models.
CO308T.4	4. To learn software testing methods and types, And to understand debugging concept with various testing methods.
CO308T.5	5. To understand software quality metrics, Source code metrics, Testing and Maintenance Project metric and fundamentals.
CO308T.6	6. To understand project management, and to know software risks and principles of quality management, further the concept of reengineering and reverse engineering.
<b>BECT308P</b>	<b>Software Engg. &amp; Project Management. -Lab</b>
CO308P.1	1. Learn the concept of requirement gathering & to learn the development of use case model.
CO308P.2	2. Understanding the object creation and the interaction between various objects & their collaboration.
CO308P.3	3. Understanding various states of objects & different component views.
CO308P.4	4. Learning the development of various UML models & understanding complete design phase.
<b>BECT309T</b>	<b>Embedded System Design</b>
CO309T.1	1. Ability to understand the basic concept of embedded systems and design cycle of embedded system design.
CO309T.2	2. Acquire knowledge about communication synchronization of processes.
CO309T.3	3. Student should understand about RTOS (Real Time Operating System)
CO309T.4	4. Ability to understand working of microcontrollers and basic assembly language programming concepts.



CO309T.5	5. Understand basic of communication, serial communication and how external devices communicate with hardware.
CO309T.6	6. Acquire knowledge about interfacing of 8051 with other devices.
<b>BECT310T</b>	<b>Functional English</b>
CO310T.1	1.Students have better reading comprehension, pronunciation, and functional English grammar.
CO310T.2	2.Students are able to write letters and resumes
CO310T.3	3.Students are able to organize their thoughts for Effective presentation and writing.
CO310T.4	4.Students are able to learn skills to present the themselves well in an interview, and handle a Group Discussion.
<b>BECT311P</b>	<b>Mini Project</b>
CO311P.1	1.Acquire practical knowledge within the chosen area of technology for project development
CO311P.2	2.Identify, analyze, formulate and handle programming projects with a comprehensive and systematic approach
CO311P.3	3.Contribute as an individual or in a team in development of technical projects
CO311P.4	4.Develop effective communication skills for presentation of project related activities
<b>Seventh Semester</b>	
<b>BECT401T</b>	<b>Compiler</b>
CO401T.1	1.Find out the basic concepts and application of Compiler Design, Students will get the concepts of the actual roles of the lexical analyzer.
CO401T.2	2.Students will get the concepts of different Parsing techniques and Construction of syntax trees
CO401T.3	3.Students will get the concepts of Intermediate code generation, Code optimization and Code generations.
CO401T.4	4.Apply their basic knowledge of Data Structure to design Symbol Table.
CO401T.5	5.Recognize various Code optimization Techniques and Error Recovery.
CO401T.6	6.Students will get the concepts of Run time Environments and Type checking.
<b>BECT401P</b>	<b>Compiler-Lab</b>
CO401P.1	1.Should be able to understand Flex lexical analyzer.
CO401P.2	2.Design flex program for recognize token.
CO401P.3	3.Implement flex program for infix and postfix using Yacc.
CO401P.4	4.Design flex program for check syntax "for" and "switch" statement.
<b>BECT402T</b>	<b>Artificial Intelligence</b>
CO402T.1	1. Understand the problem spaces, problem solving and learning methods in artificial intelligence. Apply basic artificial intelligence algorithms to solve problems.

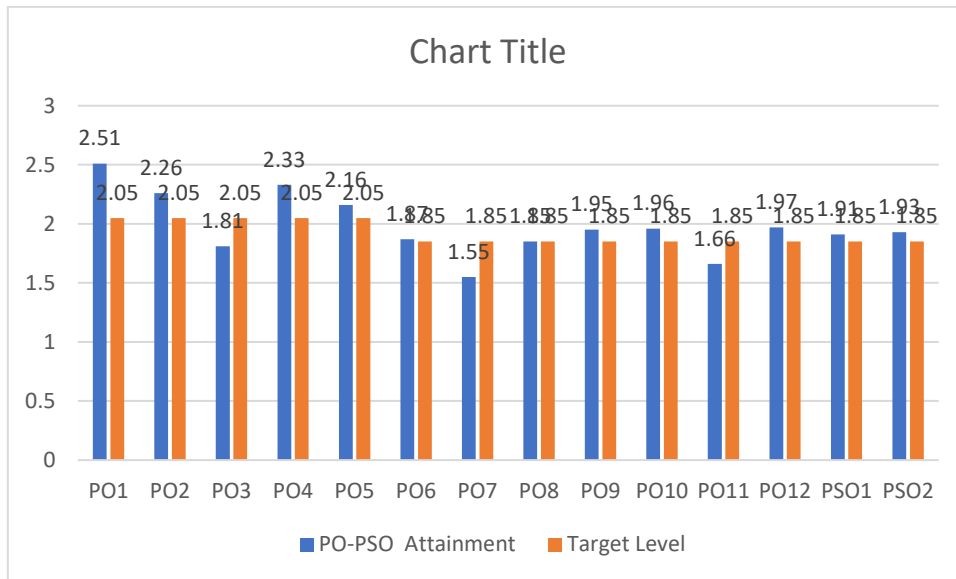
CO402T.2	2. Understand the fundamentals of knowledge representation, inference and theorem proving . Develop skill to create small to medium sized programs in Prolog, Python, Matlab.
CO402T.3	3. Analyze how uncertainty is being tackled in the knowledge representation and reasoning process, in particular, techniques based on probability theory and possibility theory.
CO402T.4	4. Should be able 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.
CO402T.5	5. Ability to apply reasoning, and machine learning techniques to real-world problems Master the skills and techniques in Natural Language Processing.
CO402T.6	6. Able to explain the function of artificial neural networks, neural learning, neural network paradigms, Genetic Algorithm and its applications.
<b>BECT402P</b>	<b>Artificial Intelligence-Lab</b>
CO402P.1	1. Apply the concept of backtracking.
CO402P.2	2. Apply the concept of Dynamic programming.
CO402P.3	3. Master the skills and techniques in Natural Language Processing.
CO402P.4	4. Be able to design a simple agent system and associated ontology and justify the design.
<b>BECT403T</b>	<b>Elect:I -Advanced Database Management Systems</b>
CO403T.1	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.
CO403T.2	2. Understand the fundamental principles and architecture of parallel database systems.
CO403T.3	3. Design and implement an Object-based database according to well known design principles that balances data retrieval performance with data consistency.
CO403T.4	4. Understand the use of XML in web application development.
CO403T.5	5. Get the fundamental concepts, benefits and problem areas associated with data warehousing.
CO403T.6	6. Analysis of essential DBMS concept such as Statistical Database security PL/SQL Security and integrity threats.
<b>BECT404T</b>	<b>Elect:II-Architecture of Web Application</b>
CO404T.1	1. To understand Basic web Architecture, Web development Framework, Protocol position in TCP/IP stack.
CO404T.2	2. To understand concept of HTTP, URL, SGML and CSS with their common syntax & key-terms.
CO404T.3	3. To understand XML, XHTML, XSL, Dynamic & Static Contents. Further to understand server Security concept.
CO404T.4	4. To know the process of HTTP Request, Processing HTTP Responses, Cookie coordination, & different Mail transfer Protocol
CO404T.5	5. To understand the Concepts of JavaScript, AJAX, & clickable maps.

CO404T.6	6.To understand Advanced concepts like Internet Telephoning, Virtual reality over the web, Intranet and Extranet, Firewall
<b>BECT405P</b>	<b>Project &amp; Seminar</b>
CO405P.1	1.Deliver effective presentations in contexts that may require power point, extemporaneous or impromptu oral presentations.
CO405P.2	2.Demonstrate both oral and written work in a grammatically accurate and rhetorically engaging style
CO405P.3	3.Conceive, arrange, and articulate ideas logically and clearly.
CO405P.4	4.Design and develop Technical reports.
<b>Eight Semester</b>	
<b>BECT406T</b>	<b>Data Warehousing &amp; Mining</b>
CO406T.1	1. Explore architecture of Data warehouse and different OLAP operations.
CO406T.2	2. Understand data mining functionalities and major issues and challenges in data mining.
CO406T.3	3. Recognize various classification methods and clustering techniques to implement the same in real world in efficient way.
CO406T.4	4. Understand the various frequent patterns and association rules with the help of Apriori and FP growth algorithms.
CO406T.5	5. Realize importance of web data mining, temporal and spatial data mining.
CO407T.6	6. Understand Big data analytics, different technologies and tools. And significance of Hadoop from industry point of view.
<b>BECT406P</b>	<b>Data Warehousing &amp; Mining-Lab</b>
CO406P.1	1.Get a knowledge of different data mining tools.
CO406P.2	2.Demonstrate WEKA Explorer, Mining techniques and Attribute Relation File.
CO406P.3	3.Implement clustering, classification, association finding, feature selection and visualization techniques on real world data.
CO406P.4	4.Determine whether a real-world problem has a data mining solution.
<b>BECT407T</b>	<b>Cyber &amp; Information Security</b>
CO407T.1	1. To understand design issues in Information Security and security threats, services and mechanisms to counter them.
CO407T.2	2. Classify computer and security threats and develop a security model, to prevent, detect and recover from attacks.
CO407T.3	3. Design and analyze authentication protocols for two party communications and analyze various key agreement algorithms to identify their weaknesses.
CO407T.4	4.Analysis of ethical issues related to the misuse of computer security, Message Authentication and key management
CO407T.5	5.To be familiar with advanced security issues and technologies (such as DDoS attack detection and containment, and anonymous communications)
CO407T.6	6.Analyze various Software vulnerability and various security issues related to the Electronic transaction
<b>BECT407P</b>	<b>Cyber &amp; Information Security-Lab</b>

CO407P.1	1.Get a fundamental understanding of Cyber and Information Security and applying the concept of Information Security
CO407P.2	2.Designing the concepts of conventional Encryption.
CO407P.3	3.Analysis of various Algorithms and its efficiency.
CO407P.4	4.Implementation of protection and security mechanisms using security tools.
<b>BECT408T</b>	<b>Elec III: Parallel Computing</b>
CO408T.1	1. Recall fundamental concepts of parallelism.
CO408T.2	2. Analyze the parallel models and Dependencies for parallelism.
CO408T.3	3. Illustrate multithreaded and message passing parallel algorithms.
CO408T.4	4. Learn parallel programming languages and implement MPI Programs.
CO408T.5	5. Compare and contrast various parallel algorithms using shared memory and MPI.
CO408T.6	6.Analyze parallel paradigms and standard laws
<b>BECT409T</b>	<b>Elec IV: Cloud Computing</b>
CO409T.1	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.
CO409T.2	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
CO409T.3	3. Gain a clear understanding of the concepts that underlie big data analysis systems along with design and implementation issues using Hadoop.
CO409T.4	4. Understanding the key dimensions of the challenge of Cloud Computing like securities.
CO409T.5	5. To enable students to learn about the basic concept of .NET.
<b>BECT410P</b>	<b>Project</b>
CO410P.1	1.Deliver effective presentations in contexts that may require power point, extemporaneous or impromptu oral presentations.
CO410P.2	2.Demonstrate both oral and written work in a grammatically accurate and rhetorically engaging style
CO410P.3	3.Conceive, arrange, and articulate ideas logically and clearly.
CO410P.4	4.Design and develop technical reports.

## PO - PSO Attainment (2019-20):

PO & PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
<b>PO-PSO Attainment</b>	2.51	2.26	1.81	2.33	2.16	1.87	1.55	1.85	1.95	1.96	1.66	1.97	1.91	1.93
<b>Target Level</b>	2.05	2.05	2.05	2.05	2.05	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85



**Fig. PO and PSO attainment for 2019-20**