## *3rd Semester*

***Course Name: BTES-301-18 (Digital Electronics)*** ***Course Year: 2019-20***

| | |
|---|---|
| C301.1 | Demonstrate the operation of simple digital gates, identify the symbols, develop the truth table for those gates; combine simple gates into more complex circuits; change binary, hexadecimal, octal numbers to their decimal equivalent an vice versa. |
| C301.2 | Demonstrate the operation of a flip-flop. Design counters and clear the concept of shift registers |
| C301.3 | Study different types of memories and their applications.Convert digital signal into analog and vice versa. |

***Course Name: BTIT-301-18 (Data Structures and Algorithms)*** ***Course Year: 2019-20***

| | |
|---|---|
| C302.1 | For a given algorithm student will able to analyze the algorithms to determine the time and computation complexity and justify the correctness |
| C302.2 | Student will be able to handle operation like searching, insertion, deletion, traversing on various Data Structures and determine time and computational complexity |
| C302.3 | Student will able to write an algorithm Selection Sort, Bubble Sort, Insertion Sort, Quick sort, Merge Sort, Heap Sort and compare their performance in term of Space and time complexity |
| C302.4 | Students will be able to choose appropriate Data Structure as applied to specific problem definition |
| C302.5 | Demonstrate the reusability of Data Structures for implementing complex iterative Problems |

***Course Name: BTIT-302-18 (Object Oriented Programming)*** ***Course Year: 2019-20***

| | |
|---|---|
| C303.1 | To understand the number system, Boolean algebra, Laws and DeMorgan's Principles for simplify Boolean expressions. |
| C303.2 | To demonstrate the operation of basic and universal gates with truth tables and symbols |
| C303.3 | To study the concept of various logic families |
| C303.4 | To design combinational logic circuits like adder/subtractor, comparator, and code convertors etc. using MUX/DEMUX and logic gates. |
| C303.5 | To classify and design sequential logic circuits like counters and shift registers using flip flops |
| C303.6 | To study organization of memories, their types and applications |
| C303.7 | To understand the concept of signal conversion using A/D(Analog to Digital) and D/A(Digital to Analog) techniques. |

***Course Name: BTAM-304-18 (Mathematics-III)*** ***Course Year: 2019-20***

| | |
|---|---|
| C304.1 | Understand the functions of several variables that are essential in most branches of engineering |
| C304.2 | Apply multiple integrals to deal with areas and volumes of various structures which are quite significant in real world |
| C304.3 | Formulate and solveengineering problems related to convergence, infinite series, power series and Taylor series |
| C304.4 | Create, select and utilize the learnt techniques of first degree ordinary differential equations to model real world problems |
| C304.5 | Develop knowledge to solve higher order ordinary differential equations. |

***Course Name: BTES-302-18(Computer Architecture)*** ***Course Year: 2019-20***

| | |
|---|---|
| C305.1 | Understand functional block diagram of microprocessor; |
| C305.2 | Apply instruction set for Writing assembly language programs; |
| C305.3 | Design a memory module and analyze its operation by interfacing with the CPU; |
| C305.4 | Classify hardwired and microprogrammed control units; |
| C305.5 | Understand the concept of pipelining and its performance metrics. |

***Course Name:(BTES-303-18)Digital Electronics Lab*** **Course Year: 2019-20**

| | |
|---|---|
| C306.1 | Realize combinational circuits using logic gates |
| C306.2 | Realize sequential circuits using logic gates. |
| C306.3 | Realize various types of Flip-flops and counters |

***Course Name:BTIT-303-18 Data structure and algorithm lab*** ***Course Year: 2019-20***

| | |
|---|---|
| C307.1 | Improve practical skills in designing and implementing basic linear data structure |
| C307.2 | Improve practical skills in designing and implementing Non-linear data structure Algorithms |
| C307.3 | Use Linear and Non-Linear data structures to solve relevant problems; |
| C307.4 | Choose appropriate Data Structure as applied to specific problem definition |
| C307.5 | Implement Various searching algorithms and become familiar with their design Methods |

***Course Name: BTIT-304-18(OOPs Lab)*** ***Course Year: 2019-20***

| | |
|---|---|
| C308.1 | Develop classes incorporating object-oriented techniques |
| C308.2 | Design and implement object-oriented concepts of inheritance and polymorphism; |
| C308.3 | Illustrate and implement STL class of containers and need for exceptions to handle errors for object oriented programs; |
| C308.4 | Design and implement any real world based problem involving GUI interface using object-oriented concepts. |

## *4th Semester*

***Course Name:BTES-401-18 (Discrete Mathematics)*** ***Course Year: 2019-20***

| | |
|---|---|
| C401.1 | To be able to express logical sentence in terms of predicates, quantifiers, and logical connectives |
| C401.2 | To derive the solution for a given problem using deductive logic and prove thesolution based on logical inference |
| C401.3 | For a given a mathematical problem, classify its algebraic structure |
| C401.4 | To evaluate Boolean functions and simplify expressions using the properties of Boolean algebra |
| C401.5 | To develop the given problem as graph networks and solve with techniques of graph theory. |

***Course Name:BTIT-401-18(Computer Networks –I)*** ***Course Year: 2019-20***

| | |
|---|---|
| C402.1 | Explain the functions of the different layer of the OSI Protocol; |
| C402.2 | 2. Describe the function of each block of wide-area networks (WANs), local area networks (LANs) and Wireless LANs (WLANs); |
| C402.3 | Develop the network programming for a given problem related TCP/IP protocol |
| C402.4 | Configure DNS DDNS, TELNET, EMAIL, File Transfer Protocol (FTP), WWW, HTTP, SNMP, Bluetooth, Firewalls using open source available software and tools |

***Course Name: BTIT-402-18 (Operating Systems)*** ***Course Year: 2019-20***

| | |
|---|---|
| C403.1 | Explain basic operating system concepts such as overall architecture, system calls, user mode and kernel mode |
| C403.2 | Distinguish concepts related to processes, threads, process scheduling, race conditions and critical sections |
| C403.3 | Analyze and apply CPU scheduling algorithms, deadlock detection and prevention Algorithms |
| C403.4 | Examine and categorize various memory management techniques like caching, paging, segmentation[, virtual memory, and thrashing; |
| C403.5 | Design and implement file management system |

| | |
|---|---|
| C403.6 | Appraise high-level operating systems concepts such as file systems, disk-scheduling |

***Course Name:BTIT-403-18(Design And Analysis Of Algorithms) Course Year:2019-20***

| | |
|---|---|
| C404.1 | For a given algorithms analyze worst-case running times of algorithms based on asymptotic analysis and justify the correctness of algorithms; |
| C404.2 | Explain when an algorithmic design situation calls for which design paradigm (greedy/ |
| C404.3 | Explain model for a given engineering problem, using tree or graph, and writethe corresponding algorithm to solve the problems; |
| C404.4 | Demonstrate the ways to analyze approximation/randomized algorithms (expected running time, probability of error) |
| C404.5 | Examine the necessity for NP class based problems and explain the use of heuristic Techniques |

***Course Name: HSMC101-18(Development of Societies) Course Year: 2019-20***

| | |
|---|---|
| C405.1 | Students will develop strong natural familiarity with humanities along with right understanding enabling them to eliminate conflict and strife in the individual and society. Students shall be able to relate philosophy to literature, culture, society and lived experience can be considered. |

***Course Name: BTIT404-18 (Computer Networks-I Lab) Course Year: 2019-20***

| | |
|---|---|
| C406.1 | Know about the various networking devices, tools and also understand the implementation of network topologies; |
| C406.2 | Create various networking cables and know how to test these cables; |
| C406.3 | Create and configure networks in packet tracer tool using various network devices and topologies; |
| C406.4 | Understand IP addressing and configure networks using the subnetting |
| C406.5 | Configure routers using various router configuration commands |
| C406.6 | Troubleshoot the networks by using various networking commands. |

***Course Name: BTIT-405-18(Operating System Lab) Course Year: 2019-20***

| | |
|---|---|
| C407.1 | Understand and implement basic services and functionalities of the operating system; |
| C407.2 | Analyze and simulate CPU Scheduling Algorithms like FCFS, Round Robin, SJF, and Priority |
| C407.3 | Implement commands for files and directories; |
| C407.4 | Understand and implement the concepts of shell programming |
| C407.5 | Simulate file allocation and organization techniques |
| C407.6 | Understand the concepts of deadlock in operating systems and implement them in multiprogramming system |

***Course Name: C406 (Design and analysis of algorithms Lab)*** ***Course Year: 2019-20***

| | |
|---|---|
| C408.1 | Improve practical skills in designing and implementing complex problems with |
| C408.2 | Understand comparative performance of strategies and hence choose appropriate, to apply to specific problem definition; |
| C408.3 | Implement Various tree and graph based algorithms and become familiar with their design methods |
| C408.4 | Design and Implement heuristics for real world problems. |

## *5th Semester*

***Course Name: BTIT501 (Formal Language & Automata Theory)*** ***Course Year: 2019-20***

| | |
|---|---|
| CO501.1 | Understand a formal notation for strings, languages and machines. |
| CO501.2 | Design finite automata to accept a set of strings of a language. |
| CO501.3 | Design context free grammars to generate strings of context free |
| CO501.4 | Write the hierarchy of formal languages, grammars and machines. |
| CO501.5 | Distinguish between computability and non-computability and |

***Course Name: BTIT502-18 (Database Management System)*** ***Course Year: 2019-20***

| | |
|---|---|
| C502.1 | write relational algebra expressions for that query and optimize the |
| C502.2 | design the databases using ER method and normalization |
| C502.3 | construct the SQL queries for Open source and Commercial DBMS-MYSQL, |
| C502.4 | determine the transaction atomicity, consistency, isolation, and durability. |
| C502.5 | Implement the isolation property, including locking, time stamping based on concurrency control and Serializability of scheduling. |

***Course Name: BTIT503-18 (Programming in Java )*** ***Course Year: 2019-20***

| | |
|---|---|
| C503.1 | Understand the features of Java such as opeartors, classes, objects, inheritance, packages and exception handling |
| C503.2 | Learn latest features of Java like garbage collection,Console class, Network interface, APIs |
| C503.3 | Acquire competence in Java through the use of multithreading, applets |
| C503.4 | Get exposure to advance concepts like socket and databease connectivity. |

***Course Name: BTIT504-18 (Software Engineering) Course Year: 2019-20***

| | |
|---|---|
| C504.1 | Understanding of Software process models such as the waterfall, prototyping and spiral models |

| | |
|---|---|
| C504.2 | Understanding of the role of project management including planning, scheduling, risk management, etc. |
| C504.3 | Understanding of object models, data models, context models and behavioral models |
| C504.4 | Describe implementation issues such as modularity and coding standards. |
| C504.5 | Understanding of software testing approaches such as unit testing, integration testing, regression testing |

***Course Name: BTIT505-18 (Database management system Lab) Course Year: 2019-20***

| | |
|---|---|
| C505.1 | This practical will enable students to retrieve data from relational databases using SQL |
| C505.2 | Students will be able to implement generation of tables using datatypes |
| C505.3 | Students will be able to design and execute the various data manipulation queries |
| C505.4 | Students will also learn to execute triggers, cursors, stored procedures etc. |

***Course Name: BTIT506-18 (Prog. In Java Lab) Course Year: 2019-20***

| | |
|---|---|
| C506.1 | Implement the features of Java such as opeartors, classes, objects, inheritance, packages and exception handling |
| C506.2 | Design problems using latest features of Java like garbage collection,Console class, Network interface, APIs |
| C506.3 | Develop competence in Java through the use of multithreading, Applets etc |
| C506.4 | Apply advance concepts like socket and database connectivity, and develop project based on industry orientation. |

***Course Name: BTIT507-18 (Software Engineering Lab) Course Year: 2019-20***

| | |
|---|---|
| C507.1 | Select a software engineering process life cycle model. |
| C507.2 | Define the requirements of the software |
| C507.3 | Analyze the given specification into a design |
| C507.4 | Contrast the various testing and quality assurance techniques. |
| C507.5 | Apply modern engineering tools for specification, design, implementation, and testing |

***Course Name: BTIT508-18 (E-Commerce) Course Year: 2019-20***

| | |
|---|---|
| C508.1 | Distinguish the E-Commerce framework and business model applications |
| C508.2 | Outline the Infrastructure of E-commerce |
| C508.3 | Apply security algorithms |
| C508.4 | Identify and operate e-payment mechanisms |

***Course Name: BTIT512-18 (E-Commerce Lab) Course Year: 2019-20***

| | |
|---|---|
| C512.1 | Understanding the E-Commerce framework |
| C512.2 | Understanding the wireless communication |
| C512.3 | Study and working of security algorithms |
| C5512.4 | Mechanism of online transaction |

## *6th Semester*

***Course Name:BTIT601-18 (Big Data) Course Year: 2019-20***

| | |
|---|---|
| C601.1 | Understand fundamental concepts of Big Data and its technologies |
| C601.2 | Apply concepts of MapReduce framework for optimization |
| C601.3 | Analyze appropriate NoSQL database techniques for storing and processing large volumes of structured and unstructured data |
| C601.4 | Understand various components of Hadoop ecosystems |
| C601.5 | Explore modern tools and packages for data visualization |

***Course Name:BTIT602-18 (Web Tehnologies) Course Year: 2019-20***

| | |
|---|---|
| C602.1 | Understand and apply the knowledge of web technology stack to deploy various web services. |
| C602.2 | Analyze and evaluate web technology components for formulating web related problems. |
| C602.3 | Design and develop interactive client server internet application that accommodates user specific requirements and constraint analysis. |
| C602.4 | Program latest web technologies and tools by creating dynamic pages with an understanding of functions and objects. |
| C602.5 | Apply advance concepts of web interface and database to build web projects in multidisciplinary environments. |
| C602.6 | Demonstrate the use of advance technologies in dynamic websites to provide performance efficiency and reliability for customer satisfaction |

***Course Name:BTIT608-18 (Machine Learning) Course Year: 2019-20***

| | |
|---|---|
| C608.1 | Analyze methods and theories in the field of machine learning |
| C608.2 | Analyze and extract features of complex datasets |
| C608.3 | Deploy techniques to comment for the Regression |

| | |
|---|---|
| C608.4 | Comprehend and apply different classification and clustering techniques |
| C608.5 | Understand the concept of Neural Networks and Genetic Algorithm |

***Course Name:BTIT609-18 (Agile Software Development)*** ***Course Year: 2019-20***

| | |
|---|---|
| C609.1 | Understand concept of agile software engineering and its advantages in software development |
| C609.2 | Explain the role of design principles in agile software design. |
| C609.3 | Define the core practices behind Scrum framework. |
| C609.4 | Understand key principles of agile software development methodology-Kanban. |
| C609.5 | Describe implications of functional testing, unit testing, and continuous integration. |
| C609.6 | Understand the various tools available to agile teams to test the project. |

***Course Name:BTIT610-18 (*Cryptography and Network Security*)*** ***Course Year: 2019-20***

| | |
|---|---|
| C610.1 | Understand the fundamental principles of access control models and techniques, authentication and secure system design |
| C610.2 | Have a strong understanding of different cryptographic protocols and |
| C610.3 | Apply methods for authentication, access control, intrusion detection and prevention. |
| C610.4 | Identify and mitigate software security vulnerabilities in existing systems |

***Course Name:BTIT613-18 (*Cloud Computing *)*** ***Course Year: 2019-20***

| | |
|---|---|
| C613.1 | Understand the core concepts of the cloud computing paradigm |
| C613.2 | Understanding importance of virtualization along with their technologies |
| C613.3 | Analyze various cloud computing service and deployment models and apply them to solve problems on the cloud. |
| C613.4 | Implementation of various security strategies for different cloud platform |

***Course Name: BTEC-601-18 (Wireless Communication)*** ***Course Year: 2019-20***

| | |
|---|---|
| BTEC-601-18 | Understand the basic elements of Cellular Radio Systems and its design |
| BTEC-601-18 | Learn about the concepts Digital communication through fading multipath channels |

| | |
|---|---|
| BTEC-601-18 | Understand various Multiple Access techniques for Wireless communication |
| BTEC-601-18 | Know about the Wireless standards and systems |

***Course Name:BTIT617-18 (Agile Software Development Lab)*** ***Course Year: 2019-20***

| | |
|---|---|
| C617.1 | Understand concept of agile software engineering |
| C617.2 | Design principle of Agile software development. |
| C617.3 | Functionality of testing in agile |
| C617.4 | Understand working of an automated tool |

## *7th Semester*

***Course Name: BTIT701 (Building Enterprise Applications)*** ***Course Year: 2019-20***

| | |
|---|---|
| C701.1 | To understand and apply the various software engineering methodologies in building enterprise applications. |
| C701.2 | To collect and analyse user requirements using formalism such as UML, including business process modelling and would be able to perform a simple risk assessment and planning for a development project and planning for a development project. |
| C701.3 | To design and develop the enterprise application architecture. |
| C701.4 | To understand networking, networking, internetworking and communication protocols required for building an enterprise application. |
| C701.5 | To construct an enterprise Application and manage a project including planning, scheduling and risk assessment/management to account for quality issues. |
| C701.6 | To tabulate and deploy Testing Plans and reproduce effective procedures at various Levels of Software development. |

***Course Name: BTIT702 (Software Project Management)*** ***Course Year: 2019-20***

| | |
|---|---|
| C702.1 | To Evaluate project and planning software project activities. |
| C702.2 | To Understanding the concept of quality management and people management. |
| C702.3 | To Learn about the organizational behaviour, job satisfaction. |
| C702.4 | To Identify the organizational and team structures. |
| C702.5 | To Understand the need of proper health and safety of people working in an organization. |
| C702.6 | To Have Knowledge about the overview of project management tools. |

***Course Name: BTIT703 (Project)*** ***Course Year: 2019-20***

| | |
|---|---|
| C703.1 | To Implement various methodologies |
| C703.2 | To Learn new advance programming techniques |

| | |
|---|---|
| C703.3 | To Enable to identify and solve real world problems |
| C703.4 | To Write technical report |
| C703.5 | Ability to apply prior acquired knowledge in problem solving |
| C703.6 | Ability to manage a project within a given time frame |

***Course Name: BTCS908 (Business Intelligence)*** ***Course Year: 2019-20***

| | |
|---|---|
| C704.1 | To understands the concept and component of Business Intelligence along with the applications areas of BI. |
| C704.2 | To understand the concept of Data Integration which is required to build Data Warehouses and intelligent Systems |
| C704.3 | To understand the concept of multidimensional modelling dimensions required for market analysis and in other the strategic areas. |
| C704.4 | To learn and operate effectively dashboard and balanced scorecards tools for industry, commerce and research enterprise reporting. |
| C704.5 | To plan and execute a significant research project to extract information from data Through OLAP tools. |
| C704.6 | To apply Data Mining concepts for formulating business strategies and methods to manipulate to enhance business intelligence. |

***Course Name: BTCS916 (Enterprise Resource Planning)*** ***Course Year: 2019-20***

| | |
|---|---|
| C705.1 | Demonstrate a good understanding of basic issues in Enterprise Systems and its technical aspects. It additionally explains the scope of common Enterprise Systems (e.g., OLAP,MM,SCM,CRM, HRM, procurement), |
| C705.2 | Learn the challenges related to implementing enterprise systems and their impacts on organizations. |
| C705.3 | Understand the concepts of re-engineering, different business processes how they relate to ERP in action and business modules. |
| C705.4 | Obtaining practical hands-on experience with ERP Software e.g. JD Edwards PeopleSoft, SAP, Oracle. |
| C705.5 | Learn the ERP and e-business technologies and their integration which have direct effects on firm performance and future directions and its trends. |

***Course Name: BTIT704 (Building Enterprise Applications Lab)*** ***Course Year: 2019-20***

| | |
|---|---|
| C706.1 | To Understand the architecture of enterprise application. |
| C706.2 | To Develop the SRS. |
| C706.3 | To Analyze the business scenario. |
| C706.4 | To Identify different module scenarios. |
| C706.5 | To Create logical architecture of databases for the enterprise. |
| C706.6 | To Understand the concept of networking, internetworking, software, hardware, middleware requirement for the enterprise. |

# 8th Semester

***Course Name: BTIT-801 (Software Training)***

Students must be able to plan, implement and test various program applications based on latest language and technology.

***Course Name: BTIT-802 (Industry Oriented Project Training)***

Students must be able to enhance their understanding for various programming methodologies and create real life entities using various programming tools.