

DEPARTMENT OF INFORMATION TECHNOLOGY	
Program Specific Outcomes(PSOs)	
At the end of the Program engineering graduate will be able to:	
1. Develop Software solution to real world problems.	
2. Process, Manage and Analyze data.	
3. Deploy Fully Functional and Secure systems	

**ITC301 : APPLIED MATHEMATICS III**

ITC301.1	Demonstrate basic knowledge of Laplace transform and will be able to solve ODEs using Laplace transform.
ITC301.2	Expand a given function using Fourier series Expansion
ITC301.3	To identify the analytic function, harmonic function, Orthogonal trajectories and to find bilinear transformations and Conformal mappings.
ITC301.4	Apply Green's theorem, Divergence theorem and Stoke's theorem to calculate line integral, surface and volume integral and will be able to apply Z-transform.

**ITC302 : LOGIC DESIGN**

ITC302.1	Understand the concepts of various components to design analog circuits
ITC302.2	Represent No's to perform arithmetic operation.
ITC302.3	Minimize the boolean expression using boolean algebra and design using logic gate
ITC302.4	Design and implement sequential circuits

**ITC303 : DATA STRUCTURES AND ANALYSIS**

ITC303.1	Students will be able to define algorithm, recognize criteria for defining algorithm and to evaluate the complexities associated with the analysis of algorithm.
ITC303.2	Students will be able to identify linear data structures such as Arrays, Linked Lists, Stacks and Queue and implement different operations on it.
ITC303.3	Students will be able to describe various searching and sorting algorithm and perform analysis on same.
ITC303.4	Students will be able to explain non linear data structures such as Trees and Graphs and implement operations on it.

**ITC304 : DATABASE MANAGEMENT SYSTEMS**

ITC304.1	Construct problem definition statements for real life applications and implement a database for the same. and Design conceptual models of a database using ER modeling for real life application
ITC304.2	Create and populate a RDBMS, using SQL. and queries in SQL to retrieve any type of information from a data base.
ITC304.3	Analyze and apply concepts of normalization to design an optimal database
ITC304.4	Implement indexes for a database using techniques like B or B+ trees. and construct queries in Relational Algebra.

**ITC305 : PRINCIPLE OF COMMUNICATIONS**

ITC305.1	Students will be able to differentiate between analogue and digital communication systems.
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ITC305.2	Students will be able to identify different types of noise occurred, its minimization and able apply Fourier analysis in frequency and time domain to quantify BW requirement of variety of analog and digital communication systems.
ITC305.3	Students will be able to design generation and detection of AM,FM transmitter and receiver. Also to apply sampling theorem to quantify relationship between channel BW and bit rate.
ITC305.4	Students will be able to explain different types of line coding techniques for generation and detection of signals.

#### **ITL304 : JAVA PROGRAMMING LAB**

ITL304.1	TO Understand language basics
ITL304.2	Able to understand Classes and Objects
ITL304.3	Able to understand Language Features
ITL304.4	To able to understand Event Handling

#### **ITC401 : APPLIED MATHEMATICS IV**

SEITC401.1	Apply matrix theory to solve system of linear equations and eigen values and eigen vectors and their applications.
SEITC401.2	Evaluate the contour integrals to identify and classify Zeroes, Singular points, Residues and their applications.
SEITC401.3	Apply concepts of probability , Correlation & Regression.
SEITC401.4	Understand the basic concepts of Sampling theory & Mathematical Programming .

#### **ITC402 : COMPUTER NETWORK**

ITC402.1	Students will be able to describe functions of each layer in OSI and TCP/IP model. They are able to explain functions of application layer and presentation layer paradigm and protocols.
ITC402.2	Students will be able to describe transport layer services.
ITC402.3	Students will be able to classify routing protocols and analyze how to assign the IP addresses for the given network.
ITC402.4	Students will be able to describe the functions of data link layer and types of transmission media with real time applications.

#### **ITC403 : OPERATING SYSTEM**

ITC403.1	To understand the fundamental components and their functions which constitute an operating system.
ITC403.2	To study process management and different scheduling techniques, process synchronization .
ITC403.3	To understand, implement and compare various memory management techniques.
ITC403.4	To understand deadlocks, techniques for deadlock avoidance, detection and prevention.
ITC403.5	Develop a basic understanding of Input and Output, roles that disks and file system
ITC403.6	To study special Purpose Operating System with emerging technologies.

<b>ITL404 : PYTHON LAB</b>	
ITL404.1	Basic of Python Language
ITL404.2	Oops in Python
ITL404.3	System related Frictions
ITL404.4	Various basic packages in python.

<b>ITC404 : COMPUTER ORGANIZATION AND ARCHITECTURE</b>	
ITC404.1	Conceptualize the basis of organizational and architectural issues of digital computer.
ITC404.2	Learn the function of each element of memory hierarchy and study various data
ITC404.3	Articulate design issues in the development of processor or other
ITC404.4	Learn Microprocessor architecture and study assembly language programming.

<b>ITC405 : AUTOMATA THEORY</b>	
ITC405.1	Ability to design Regular language, Regular Grammar and Expression.
ITC405.2	Ability to design different types of Finite automata as Acceptor, Verifier and translator.
ITC405.3	Ability to understand Context free languages, grammar and expression and to design push down automata as simple parser.
ITC405.4	Ability to design different types of Turning Machines as acceptor, Verifier and translator.

<b>TEITC501 : MICROCONTROLLER AND EMBEDDED PROGRAMMING</b>	
TEITC501.1	Explain the embedded system concepts and architecture of embedded systems and 8051
TEITC501.2	Design the interfacing for 8051 microcontroller.
TEITC501.3	Understand the concepts of ARM architecture and the open source RTOS and solve the design issues for the same
TEITC501.4	Select elements for an embedded systems tool.

<b>TEITC502 : INTERNET PROGRAMMING</b>	
TEITL502.1	Students will be able to create basic UI by using HTML ,CSS, Bootstrap
TEITL502.2	Students will be able to write client side programmes by using Java Script, Basic Angular JS
TEITL502.3	Students will be able to write server side programmes by using PHP and Django
TEITL502.4	Students will able to understand and use XML , Json, Ajax.

<b>TEITC503 : ADVANCED DATA MANAGEMENT TECHNOLOGY</b>	
TEITC503.1	Ability to construct complex queries using SQL and conceptualize advanced concepts of transaction and recovery techniques.
TEITC503.2	Ability to measure query costs and design alternate efficient paths for query execution.
TEITC503.3	Ability to implement alternate models like Distributed databases and Design applications using advanced models like mobile, spatial databases.
TEITC503.4	Ability to develop enterprise data and organize data to perform analysis and take strategic decisions.

<b>TEITC504 : CRYPTOGRAPHY AND NETWORK SECURITY</b>	
TEITC504.1	Identify security goals, classical encryption techniques.
TEITC504.2	Understand, compare and apply different encryption and decryption techniques to solve problems related to confidentiality
TEITC504.3	Evaluate different message digest algorithms for verifying the integrity of varying message sizes, Apply different digital signature algorithms to achieve authentication
TEITC504.4	Apply network security basics, analyse different attacks on networks and evaluate the performance of firewalls and security protocols like SSL, IPSec and PGP.

<b>TEITC505 : BUSINESS COMMUNICATION AND ETHICS</b>	
TEITC505.1	Design a technical document using precise language, suitable vocabulary and apt style and life skills/ interpersonal skills to progress professionally by building stronger
TEITC505.2	Demonstrate awareness of contemporary issues knowledge of professional and ethical responsibilities
TEITC505.3	Apply the traits of a suitable candidate for a job/higher education, upon being trained in the techniques of holding a group discussion, facing interviews and writing resume/SOP
TEITC505.4	Deliver formal presentations effectively implementing the verbal and non-verbal skills

<b>TEITC601 : SOFTWARE ENGINEERING</b>	
TEITC601.1	Students will be able to understand CMM, prespective models along with agile process models
TEITC601.2	Students will be able to design software engg models for analysis and design stage and prepare SRS
TEITC601.3	Students are able to understand software testing strategies and tactics and change management
TEITC601.4	Student will be able to perform software project estimation using techniques like LOC based estimation, FP based estimation and understand Risk and Quality management

<b>TEITC602 : DISTRIBUTED SYSTEMS</b>	
TEITC602.1	Ability to understand fundamental concepts of distributed systems and implement message communication.
TEITC602.2	Ability to employ/use key mechanisms like clock synchronization, mutual exclusion, election algorithm.
TEITC602.3	Ability to create/design applications using middleware technologies like EJB, CORBA, .net framework.
TEITC602.4	Ability to develop/design distributed system applications for an enterprise using SOA.

<b>TEITC603 : SYSTEM AND WEB SECURITY</b>	
TEITC603.1	To understand the fundamental principles of access control models and techniques, authentication and secure system design
TEITC603.2	To apply methods for authentication, access control, intrusion detection and prevention.

TEITC603.3	To identify and mitigate software security vulnerabilities in existing systems.
TEITC603.4	To understand the role of firewall, IPSec, Virtual Private Network and Web Server Vulnerabilities.

<b>TEITC604 : DATA MINING AND BUSINESS INTELLIGENCE</b>	
TEITC604.1	Understand the concepts of data exploration, preprocessing, relevant data mining techniques and data visualization tools.
TEITC604.2	Implement the appropriate data mining methods like classification, clustering on large datasets
TEITC604.3	Understand concept of frequent patterns, outliers, how and when data mining can be used as a problem-solving technique in business context.
TEITC604.4	Apply data mining algorithms and being aware of its importance in business intelligence.

<b>TEITC605 : ADVANCED INTERNET TECHNOLOGY</b>	
TEITC605.1	To introduce the concept of search engine basics
TEITC605.2	To enable students to determine SEO objectives and develop SEO plan prior to site development
TEITC605.3	TO make students well versed with HTML5 and CSS3 and Responsive web design.
TEITC605.4	Learning the characteristics of RIA- web mashup

<b>BEITC701 : SOFTWARE PROJECT MANAGEMENT</b>	
BEITC701.1	Differentiate the similarities and differences between IT projects concepts and various other types of projects. Develop a business case and perform feasibility study on the same. Formulate the project charter.
BEITC701.2	Develop a work breakdown structure for an IT project. Evaluate time & cost resources by developing project schedule and budget. Formulate task interdependencies & synthesize n/w diagram.
BEITC701.3	Evaluate human resources, identify various leadership styles & perform team work and team spirit by resolving the conflicts. Characterize an effective communication plan to report the projects progress. Evaluate or rank the quality of the project using various standards.
BEITC701.4	Illustrate IT project risks and describe risk mitigation strategies and to describe the several ways to improve the likelihood of outsourcing success. Locate the tactical approaches to information system implementation & installation, identify different types of project evaluation and finally describe the process associated with project closure.

<b>BEITC703 : INTELLIGENT SYSTEM</b>	
BEITC703.1	Ability to identify the basic building blocks of AI required for constructing intelligent agents for toy problems.
BEITC703.2	Ability to solve problems using different search techniques like informed search, uninformed search and adversarial search.
BEITC703.3	Ability to understand & implement various applications including expert systems using logic language with the help of certain & uncertain knowledge & reasoning
BEITC703.4	.

<b>BEITC704 : WIRELESS TECHNOLOGY</b>	
BEITC704.1	Students will be able to understand multiple radio access technique and the new trend in mobile/wireless Local loop communication network.
BEITC704.2	Students will be able to understand the multiuser detection techniques (GSM CDMA).
BEITC704.3	Students will understand various wireless networks and their technologies. (WLAN,WPAN,WMAN)
BEITC704.4	Students will understand the need of securities and economies in wireless system.

<b>BEITS7051 : IMAGE PROCESSING</b>	
BEITC7051.1	To understand the fundamental concept of a digital i
BEITC7051.2	To Apply image enhancement techniques for improving image quality with respect to applications
BEITC7051.3	Students will be able to implement IP techniques such as segmentation, representation and description
BEITC7051.4	Students will be able to implement morphological operations for recognition or building computer vision

<b>BEITC7053 : E-COMMERCE AND E-BUSINESS</b>	
BEITC7053.1	Students will be able to understand basic of E-Commerce ,E-Business and E-Structure.
BEITC7053.2	Students will be able to design website and payment system using h/w and s/w technology of E-commerce.
BEITC7053.3	Students gain knowledge of Strategies of E-marketing.
BEITC7053.4	Students will be able to built SDLC for E-business website and TO understand E-business Strategies process planning.
BEITC801.1	Evaluate the need for storage networking, current storage technologies such as RAID ISS
BEITC801.2	Examine network architecture-SAN,NAS which will bridge the gap between the emerging trends in industry and academics
BEITC801.3	Understand and define storage network and its backup recovery and techniques
BEITC801.4	Define information retrieval in storage network and identify different storage virtualization technologies

<b>BEITC7054 : MULTIMEDIA SYSTEMS</b>	
BEITC7054.1	Students will be able to understand characteristics of multimedia and MM Authoring tools along with basic components like color model,video,and transmission of audio and to understand compression algorithm.
BEITC7054.2	Students will be able to understand multimedia compression standards for image audio and video.
BEITC7054.3	Students will be able to examine several important MM n/w and application and to design MM database and its type.
BEITC7054.4	.Students will be able understand standard activities,standardization process on MM communication,ISO/MPEG 21 framework and ITU,MPEG Application.

<b>BEITC801 : STORAGE NETWORK MANAGEMENT AND RETRIEVAL</b>	
BEITC801.1	Evaluate the need for storage networking, current storage technologies such as RAID ISS
BEITC801.2	Examine network architecture-SAN,NAS which will bridge the gap between the emerging trends in industry and academics
BEITC801.3	Understand and define storage network and its backup recovery and techniques
BEITC801.4	Define information retrieval in storage network and identify different storage virtualization technologies

<b>BEIT802 : BIG DATA ANALYTICS</b>	
BEITC802.1	At the end of course student will be able to understand Hadoop, MapReduce architecture and implement programs.
BEITC802.2	At the end of course student will be able to acquire knowledge of NoSQL.
BEITC802.3	At the end of course student will be able to understand and apply mining techniques on static data.
BEITC802.4	At the end of the course student will be able to understand and apply mining techniques on streaming data.

<b>BEIT803 : COMPUTER SIMULATION AND MODELING</b>	
BEITC803.1	To enable students to understand the meaning of simulation, identify common applications of discrete event simulation and perform simulation using spreadsheets and simulation language.
BEITC803.2	To enable students to understand and use Statistical & Queuing models.
BEITC803.3	To enable students to understand & generate random numbers & define random variate generators.
BEITC803.4	To enable students to perform analysis of simulation data and fit the data to different distributions.

<b>BEITC804 : ENTERPRISE RESOURCE PLANNING</b>	
BEITC8041.1	To understand ERP and its importance and various related technologies.
BEITC8041.2	To understand & design ERP modules and to understand ERP manufacturing perspective.
BEITC8041.3	To understand ERP Implementation Lifecycle & list the benefits of ERP.
BEITC8041.4	To understand Ecommerce and transformation of E-Commerce to E-business and E-business Architecture.

<b>BEITC8046 : SOFTWARE TESTING AND QUALITY ASSURANCE</b>	
BEITC8046.1	Have basic understanding and knowledge of contemporary issues in software testing and various debugging methods.
BEITC8046.2	Introduce various approaches, techniques, technologies, and methodologies used in software testing and quality assurance.
BEITC8046.3	Illustrate the above-mentioned topics with examples and test plans.
BEITC8046.4	Study different testing tools in software testing and quality assurance and to understand software test automation problems and solutions