Institute of Engineering

Department of Information Technology

Course Outcome

SEIT Course-2015		
SEMESTER-I		
SEIT Course-2015	**COs**	**Course Outcomes**
214441 : DISCRETE STRUCTURES	**214441.1**	Use set, relation and function to formulate a problem and solve it
	214441.2	Use graph theory and trees to formulate the problems and solve them
	214441.3	Use mathematical propositions and proof techniques to check the truthfulness of a real life situation.
214442 : COMPUTER ORGANIZATION &ARCHITECTURE	**214442.1**	Solve problems based on computer arithmetic.
	214442.2	Explain processor structure & its functions.
	214442.3	Obtain knowledge about micro-programming of a processor
	214442.4	Understand concepts related to memory & IO organization.
	214442.5	Acquire knowledge about instruction level parallelism & parallel organization of multi-processors & multi core systems.
214443 : DIGITAL ELECTRONICS AND LOGIC DESIGN	**214443.1**	Spectacle an awareness and apply knowledge of number systems, codes, Boolean algebra and use necessary A.C, D.C Loading characteristics as well as functioning while designing with logic gates
	214443.2	Use logic function representation for simplification with K-Maps and analyze as well as design Combinational logic circuits using SSI & MSI chips.
	214443.3	Analyze Sequential circuits like Flip-Flops (Truth Table, Excitation table), their conversion & design the applications.
	214443.4	Identify the Digital Circuits, Input/Outputs to replace by FPGA
	214443.5	Use VHDL programming technique with different modelling styles for any digital circuits.
214444 : FUNDAMENTAL OF DATA STRUCTURES	**214444.1**	Apply appropriate constructs of C language, coding standards for application development.
	214444.2	Use dynamic memory allocation concepts and file handling in various application developments
	214444.3	Perform basic analysis of algorithms with respect to time and space complexity
	214444.4	Select appropriate searching and/or sorting techniques in the application development
	214444.5	Select and use appropriate data structures for

		problem solving and programming
	214444.6	Use algorithmic foundations for solving problems and programming
214445 : PROBLEM SOLVING AND OBJECT ORIENTED PROGRAMMING	**214445.1**	Develop algorithms for solving problems by using modular programming concepts
	214445.2	Abstract data and entities from the problem domain, build object models and design software solutions using object-oriented principles and strategies
	214445.3	Discover, explore and apply tools and best practices in object-oriented programming.
	214445.4	Develop programs that appropriately utilize key object-oriented concepts
214446 : DIGITAL LABORATORY	**214446.1**	Spectacle an awareness and apply knowledge and concepts and methods of digital system design techniques as hands-on experiments with the use of necessary A.C, D.C Loading characteristics.
	214446.2	Use logic function representation for simplification with K-Maps and analyze as well as design Combinational logic circuits using SSI & MSI chips.
	214446.3	Analyze Sequential circuits like Flip-Flops (Truth Table, Excitation table) & design the applications like Asynchronous and Synchronous Counters.
	214446.4	Design Sequential Logic circuits: Sequence generators, MOD counters with registers/Counters using synchronous /asynchronous counters.
	214446.5	Understand the need of skills, techniques and learn state-of-the-art engineering tools through hands-on experimentation on the Xilinx tools for design as well as the basics of VHDL.
	214446.6	Understand and implement the design Steps, main programming technique with different modelling styles for any digital circuits with VHDL Programming.
214447 : PROGRAMMING LABORATORY	**214447.1**	Apply appropriate constructs of C language, coding standards for application development.
	214447.2	Use dynamic memory allocation concepts and file handling in various application developments.
	214447.3	Perform basic analysis of algorithms with respect to time and space complexity
	214447.4	Select appropriate searching and/or sorting techniques in the application development
	214447.5	Select and use appropriate data structures for problem solving and programming
	214447.6	Use algorithmic foundations for solving problems and programming
214448 : OBJECT ORIENTED PROGRAMMING LABORATORY	**214448.1**	Develop and implement algorithms for solving simple problems using modular programming concept.
	214448.2	Abstract data and entities from the problem domain, build object models and design software solutions using object-oriented principles and

		strategies.
	214448.3	Discover, explore and apply tools and best practices in object-oriented programming
	214448.4	Develop programs that appropriately utilize key object-oriented concepts
	214448.5	Create a data base using files
214449 : COMMUNICATION SKILLS	**214449.1**	Provides an ability to understand, analyze and interpret the essentiality of grammar and its proper usage.
	214449.2	Build the students' vocabulary by means of communication via web, direct Communication and indirect communication
	214449.3	Improves Students Pronunciation skills and understanding between various phonetic sounds during communication.
	214449.4	Understanding the various rules and means of written communication.
	214449.5	Effective communication with active listening, facing problems while communication and how to overcome it.
210250: Audit Course1: AC1-IV: Smart Cities	**210250.1**	Better understanding of the dynamic behaviour of the urban system by going beyond the physical appearance and by focusing on representations, properties and impact factors
	210250.2	Exploration of the city as the most complex human-made organism with a metabolism that can be modelled in terms of stocks and flows
	210250.3	Knowledge about data-informed approaches for the development of the future city, based on crowd sourcing and sensing
	210250.4	Knowledge about the latest research results in for the development and management of future cities
	210250.5	Understanding how citizens can benefit from data-informed design to develop smart and responsive cities
SEMESTER-II		
SEIT Course-2015	**COs**	**Course Outcomes**
207003 : ENGINEERING MATHEMATICS – III	**207003.1**	Solve higher order linear differential equation using appropriate techniques for modeling and analyzing electrical circuits
	207003.2	Solve problems related to Fourier transform, Z-Transform and applications to Signal and Image processing.
	207003.3	Apply statistical methods like correlation, regression analysis and probability theory for analysis and prediction of a given data as applied to machine intelligence.
	207003.4	Perform vector differentiation and integration to analyze the vector fields and apply to compute line, surface and volume integrals.
	207003.5	Analyze conformal mappings, transformations and

		perform contour integration of complex functions required in Image processing, Digital filters and Computer graphics.
214450 : COMPUTER GRAPHICS	**214450.1**	Apply mathematics and logic to develop Computer programs for elementary graphic operations
	214450.2	Develop scientific and strategic approach to solve complex problems in the domain of Computer Graphics
	214450.3	Develop the competency to understand the concepts related to Computer Vision and Virtual reality
	214450.4	Apply the logic to develop animation and gaming programs
214451 : PROCESSOR ARCHITECTURE AND INTERFACING	**214451.1**	Learn architectural details of 80386 microprocessor
	214451.2	Understand memory management and multitasking of 80386 microprocessor
	214451.3	Understand architecture and memory organization of 8051microcontroller
	214451.4	Explain timers and interrupts of 8051 microcontroller and its interfacing with I/O devices
214452 : DATA STRUCTURES AND FILES	**214452.1**	Analyze algorithms and to determine algorithm correctness and time efficiency class.
	214452.2	Understand different advanced abstract data type (ADT) and data structures and their implementations.
	214452.3	Understand different algorithm design techniques (brute -force, divide and conquer, greedy, etc.) and their implementation
	214452.4	Apply and implement learned algorithm design techniques and data structures to solve problems
214453 : FOUNDATIONS OF COMMUNICATION AND COMPUTER NETWORK	**214453.1**	Understand data/signal transmission over communication media
	214453.2	Recognize usage of various modulation techniques in communication
	214453.3	Analyze various spread spectrum and multiplexing techniques
	214453.4	Use concepts of data communication to solve various related problems
	214453.5	Understand error correction and detection techniques.
	214453.6	Acquaint with transmission media and their standards
214454 : PROCESSOR INTERFACING LABORATORY	**214454.1**	Learn and apply concepts related to assembly language programming
	214454.2	Write and execute assembly language program to perform array addition, code conversion, block transfer, sorting and string operations
	214454.3	Learn and apply interfacing of real world input and output devices to 8051 microcontroller
214455 : DATA	**214455.1**	Apply and implement algorithm to illustrate use of

STRUCTURE AND FILES LABORATORY		linear data structures such as stack, queue
	214455.2	Apply and implement algorithms to create/represent and traverse non-linear data structures such as trees, graphs etc
	214455.3	Apply and implement algorithms to create and manipulate database using different file organizations
	214455.4	Learn and apply the concept of hashing in database creation and manipulation
214456 : COMPUTER GRAPHICS LABORATORY	**214456.1**	Apply and implement line drawing and circle drawing algorithms to draw specific shape given in the problem
	214456.2	Apply and implement polygon filling algorithm for a given polygon
	214456.3	Apply and implement 2-D and 3-D transformation algorithms for given input shape
	214456.4	Apply and implement polygon clipping algorithm for given input polygon
	214456.5	Apply and implement fractal generation algorithm for a given input
	214456.6	Apply and implement animation concepts for generating simple animation without using any animation tool
TEIT Course-2015		
SEMESTER-I		
TEIT Course-2015	**COs**	**Course Outcomes**
314441: THEORY OF COMPUTATION	**314441.1**	To construct finite state machines to solve problems in computing.
	314441.2	To write mathematical expressions for the formal languages
	314441.3	To apply well defined rules for syntax verification.
	314441.4	To construct and analyze Push Down, Post and Turing Machine for formal languages.
	314441.5	To express the understanding of the decidability and decidability problems
	314441.6	To express the understanding of computational complexity
314442 : DATABASE MANAGEMENT SYSTEMS	**314442.1**	To define basic functions of DBMS & RDBMS.
	314442.2	To analyze database models & entity relationship models.
	314442.3	To design and implement a database schema for a given problem-domain.
	314442.4	To populate and query a database using SQL DML/DDL commands.
	314442.5	Do Programming in PL/SQL including stored procedures, stored functions, cursors and packages.
	314442.6	To appreciate the impact of analytics and big data on the information industry and the external ecosystem for analytical and data services.
314443 : SOFTWARE	**314443.1**	To understand the nature of software complexity

ENGINEERING AND PROJECT MANAGEMENT		in various application domains, disciplined way of software development and software lifecycle process models.
	314443.2	To introduce principles of agile software development, the SCRUM process and agile practices.
	314443.3	To know methods of capturing, specifying, visualizing and analyzing software requirements
	314443.4	To understand project management through life cycle of the project.
	314443.5	To understand current and future trends and practices in the IT industry.
	314443.6	To learn about project planning, execution, tracking, audit and closure of project.
314444 : OPERATING SYSTEM	**314444.1**	Fundamental understanding of the role of Operating Systems
	314444.2	To understand the concept of a process and thread.
	314444.3	To apply the cons of process/thread scheduling.
	314444.4	To apply the concept of process synchronization, mutual exclusion and the deadlock.
	314444.5	To realize the concept of I/O management and File system.
	314444.6	To understand the various memory management techniques.
314445 : HUMAN-COMPUTER INTERACTION	**314445.1**	To explain importance of HCI study and principles of user-centered design (UCD) approach.
	314445.2	To develop understanding of human factors in HCI design.
	314445.3	To develop understanding of models, paradigms and context of interactions.
	314445.4	To design effective user-interfaces following a structured and organized UCD process.
	314445.5	To evaluate usability of a user-interface design.
	314445.6	To apply cognitive models for predicting human-computer-interactions.
314446 : SOFTWARE LABORATORY - I	**314446.1**	To install and configure database systems.
	314446.2	To analyze database models & entity relationship models.
	314446.3	To design and implement a database schema for a given problem-domain
	314446.4	To understand the relational and document type database systems
	314446.5	To populate and query a database using SQL DML/DDL commands.
	314446.6	To populate and query a database using MongoDB commands
314447 : SOFTWARE LABORATORY – II	**314447.1**	To understand the basics of Linux commands and program the shell of Linux
	314447.2	To develop various system programs for the functioning of operating system.

	314447.3	To implement basic building blocks like processes, threads under the Linux.
	314447.4	To develop various system programs for the functioning of OS concepts in user space like Concurrency control and file handling in Linux.
	314447.5	To design and implement Linux Kernel Source Code.
	314447.6	To develop the system program for the functioning of OS concepts in kernel space like embedding the system call in any Linux kernel.
314448 : SOFTWARE LABORATORY – III	**314448.1**	To identify the needs of users through requirement gathering.
	314448.2	To apply the concepts of Software Engineering process models for project development.
	314448.3	To apply the concepts of HCI for user-friendly project development.
	314448.4	To deploy website on live webserver and access through URL.
	314448.5	To understand, explore and apply various web technologies.
	314448.6	To develop team building for efficient project development
314449 : AC3-IV AUDIT COURSE 3	**314449.1**	Develop a far deeper understanding of the changing digital landscape.
	314449.2	Identify some of the latest digital marketing trends and skill sets needed for today's marketer
	314449.3	Successful planning, prediction, and management of digital marketing campaigns.
	314449.4	Implement smart management of different digital assets for marketing needs. Assess digital marketing as a long term career opportunity
SEMESTER-II		
TE IT, Course-2015	**COs**	**Course Outcome**
314450 : COMPUTER NETWORK TECHNOLOGY	**314450.1**	To know Responsibilities, services offered and protocol used at each layer of network.
	314450.2	To understand different addressing techniques used in network.
	314450.3	To know the difference between different types of network.
	314450.4	To know the different wireless technologies and IEEE standards.
	314450.5	To use and apply the standards and protocols learned, for application development.
	314450.6	To understand and explore recent trends in network domain.
314451 : SYSTEMS PROGRAMMING	**314451.1**	To study and understand different system software like Assembler, Macro-processor and Loaders /Linkers.
	314451.2	To design and develop useful system software.
	314451.3	To study and understand compiler design.
	314451.4	To understand semantic analysis and storage

		allocation in compilation process.
	314451.5	To understand different code generation techniques.
	314451.6	To study different code optimization methods.
314452 : DESIGN AND ANALYSIS OF ALGORITHMS	**314452.1**	To calculate computational complexity using asymptotic notations for various algorithms.
	314452.2	To apply Divide & Conquer as well as Greedy approach to design algorithms.
	314452.3	To practice principle of optimality.
	314452.4	To illustrate different problems using Backtracking.
	314452.5	To compare different methods of Branch and Bound strategy.
	314452.6	To explore the concept of P, NP, NP-complete, NP-Hard and parallel algorithms.
314453 : CLOUD COMPUTING	**314453.1**	To understand the need of Cloud based solutions.
	314453.2	To understand Security Mechanisms and issues in various Cloud Applications
	314453.3	To explore effective techniques to program Cloud Systems.
	314453.4	To understand current challenges and trade-offs in Cloud Computing.
	314453.5	To find challenges in cloud computing and delve into it to effective solutions.
	314453.6	To understand emerging trends in cloud computing.
314454 : DATA SCIENCE AND BIG DATA ANALYTICS	**314454 .1**	To understand Big Data primitives.
	314454 .2	To learn and apply different mathematical models for Big Data.
	314454 .3	To demonstrate their Big Data learning skills by developing industry or research applications.
	314454 .4	To analyze each learning model come from a different algorithmic approach and it will perform differently under different datasets.
	314454 .5	To understand needs challenges and techniques for big data visualization.
	314454.6	To learn different programming platforms for big data analytics.
314455 : SOFTWARE LABORATORY – IV	**314455.1**	To implement small size network and its use of various networking commands.
	314455.2	To understand and use various networking and simulations tools.
	314455.3	To configure various client/server environments to use application layer protocols
	314455.4	To understand the protocol design at various layers.
	314455.5	To explore use of protocols in various wired and wireless applications.
	314455.6	To develop applications on emerging trends.
314456 : SOFTWARE LABORATORY - V	**314456.1**	To design and implement two pass assembler for hypothetical machine instructions.
	314456.2	To design and implement different phases of compiler (Lexical Analyzer, Parser, Intermediate

		code generation)
	314456.3	To use the compile generation tools such as “Lex" and "YACC”.
	314456.4	To apply algorithmic strategies for solving various problems.
	314456.5	To compare various algorithmic strategies.
	314456.6	To analyze the solution using recurrence relation.
314457 : SOFTWARE LABORATORY - VI	**314457.1**	To apply Big data primitives and fundamentals for application development.
	314457.2	To explore different Big data processing techniques with use cases.
	314457.3	To apply the Analytical concept of Big data using R/Python.
	314457.4	To visualize the Big Data using Tableau.
	314457.5	To design algorithms and techniques for Big data analytics.
	314457.6	To design Big data analytic application for emerging trends.
314458 : PROJECT BASED SEMINAR	**314458.1**	To Gather, organize, summarize and interpret technical literature with the purpose of formulating a project proposal.
	314458.2	To write a technical report summarizing state-of-the-art on an identified topic.
	314458.3	Present the study using graphics and multimedia presentations.
	314458.4	Define intended future work based on the technical review.
	314458.5	To explore and enhance the use of various presentation tools and techniques.
	314458.6	To understand scientific approach for literature survey and paper writing.
314459 : Audit Course 4 Health & Fitness Management	**314459.1**	Identify the health- and skill-related fitness components for fitness development.
	314459.2	Understand the benefits of physical fitness, and the underlying principles, physiology, and practices
	314459.3	Apply of fitness management skills and strategies for the development of physical activity habits and personal fitness by the students.
	314459.4	Aware about healthy diet for physical and mental fitness of an individual.
	314459.5	Understand importance of mental fitness along with physical fitness by practicing yoga, meditation and relaxation techniques.

BEIT Course-2012

SEMESTER-I

BE IT, Course-2012	**COs**	**Course Outcome**
414453 : INFORMATION AND CYBER SECURITY	**414453.1**	Students shall be able to understand what are the common threats faced today
	414453.2	What is the foundational theory behind information security

	414453.3	What are the basic principles and techniques when designing a secure system
	414453.4	How today's attacks and defenses work in practice
	414453.5	How to assess threats for their significance
	414453.6	How to gauge the protections and limitations provided by today's technology
414454 : SOFTWARE MODELING AND DESIGN	**414454.1**	Understand the usage of various UML diagrams to build a model
	414454.2	Prepare an object oriented model in business domain of an application.
	414454.3	Prepare an object oriented model in solution domain.
	414454.4	Apply object oriented principles in the design of software system.
	414454.5	Get started on study of GOF design patterns.
	414454.6	Understand different types of software testing.
414455 : MACHINE LEARNING	**414455.1**	Students will be able to model the learning primitives.
	414455.2	Students will be able to build the learning model.
	414455.3	Student will be able to tackle real world problems in the domain of Data Mining, Information Retrieval, Computer vision, Linguistics and Bioinformatics.
414456 E - ELECTIVE I : CLOUD COMPUTING	**414456 E.1**	Understand and Familiar with the basic concepts of cloud computing.
	414456 E.2	Understand how to build large scale distributed systems and cloud applications.
	414456 E.3	Comprehend the importance of cloud security.
	414456 E.4	Understand Ubiquitous Computing and applications.
414457 A - ELECTIVE II : BUSINESS INTELLIGENCE	**414457 A.1**	Design and implement OLTP, OLAP and Warehouse concepts.
	414457 A.2	Design and develop Data Warehouse using Various Schemas & Dimensional modeling.
	414457 A.3	Use the ETL concepts, tools and techniques to perform Extraction, Transformation, and Loading of Data.
	414457 A.4	Report the usable data by using various reporting concepts, techniques/tools, and use charts, tables for reporting in BI.
	414457 A.5	Use Analytics concepts like data mining, Exploratory and statistical techniques for predictive analysis in Business Intelligence.
	414457 A.6	Demonstrate application of concepts in BI.
414458 : SOFTWARE LABORATORY – III	**414458.1**	The students will be able to implement and port controlled and secured access to software systems and networks.
	414458.2	The students will be able to build learning software in various domains.
414459 : SOFTWARE LABORATORY – IV	**414459.1**	Students will be able to identify classes and collaboration from requirements.
	414459.2	Students will be able to prepare analysis and

		design model and implement.
	414459.3	Students will be able to use the test driven development approach in implementation.
	414459.4	Students will be able to experience Object Oriented Software Development life cycle activities.
414460 : PROJECT PHASE - I	**414460.1**	At the end of this course the student should be able to show preparedness to study independently in chosen domain of Information Technology and programming languages and apply to variety of real time problem scenarios.
SEMESTER-II		
414461 : Distributed System	**414461.1**	Understand the principles and desired properties of distributed systems on which the internet and other distributed systems are based.
	414461.2	Understand and apply the basic theoretical concepts and algorithms of distributed systems in problem solving.
	414461.3	Recognize the inherent difficulties that arise due to distributed-ness of computing resources.
	414461.4	Identify the challenges in developing distributed applications.
414462 : Advanced Databases	**414462.1**	Understanding of Advances in Database Architectures for Big data.
	414462.2	Master the basics of web and object oriented database using XML and JDOQL.
	414462.3	Master the basic concepts of NoSQL Databases.
	414462.4	Understand how analytics and big data affect various functions now and in the future.
	414462.5	Appreciate the impact of analytics and big data on the information industry and the external ecosystem for analytical and data services.
	414462.6	Understanding of current trends in databases.
414463 D - ELECTIVE III : IT ENABLED SERVICES	**414463 D .1**	Students will be able to understand the process of IT Industry
	414463 D .2	Students will be able to understand Indian laws of IT industry
	414463 D .3	Student will be able to study current trends and services in IT industry
	414463 D .4	Student will be able to understand programming concept of IT Web services.
414464 C - ELECTIVE IV : GREEN IT – PRINCIPLES AND PRACTICES	**414464 C .1**	Students will be able to create awareness among stakeholders and promote green agenda and green initiatives in their working environments leading to green movement.
	414464 C .2	This green movement will create new career opportunities for IT professionals, auditors and others with special skills such as energy efficiency, ethical IT assets disposal, carbon footprint estimation, reporting and development of green products, applications and services.
414465 : SOFTWARE	**414465.1**	Understand the principles on which the internet

LABORATORY – V		and other distributed systems are based.
	414465.2	Understand and apply the basic theoretical concepts and algorithms of distributed systems in problem solving.
414466 : SOFTWARE LABORATORY – VI	**414466.1**	Understanding of Advanced Database Programming Languages.
	414466.2	Master the basics of web and object oriented database languages and construct queries using XML and JDOQL.
	414466.3	Master the basic concepts of NoSQL Databases.
	414466.4	Understand how analytics and big data affect various functions now and in the future.
	414466.5	Appreciate the impact of analytics and big data on the information industry and the external ecosystem for analytical and data services.
414467 : PROJECT WORK	**414467:1**	To study and implement chosen domain/Topic of Information Technology and programming languages. And to apply it to variety of real time problem scenarios