Course Outcomes

FE Semester – I		
FE Computer, Course-2015	**COs**	**Course Outcome**
110003 Fundamentals of Programming Language – I	**110003.1**	Ability to use modular programming approach in diversified problem domains.
	110003.2	Ability to apply programming logic to solve real world problems.
	110003.3	Ability to decide effectiveness of computer based solutions.

FE Semester – II		
FE Computer, Course-2015	**COs**	**Course Outcome**
110010 Fundamentals of Programming Language – II	**110010.1**	Ability to develop programs using object oriented concepts.
	110010.2	Ability to design and develop web pages using HTML.
	110010.3	Ability to design and develop mobile application using Android SDK.
	110010.4	Ability to design and develop simple application using Embedded Programming.

SE Semester – I		
SE Computer Course - 2015	**COs**	**Course Outcome**
210241 Discrete Mathematics	**210241.1**	Solve real world problems logically using appropriate set, function, and relation models and interpret the associated operations and terminologies in context.
	210241.2	Analyze and synthesize the real world problems using discrete mathematics.
210242 Digital Electronics & Logic Design	**210242.1**	Realize and simplify Boolean Algebraic assignments for designing digital circuits using K-Maps.
	210242.2	Design and implement Sequential and Combinational digital circuits as per the specifications.
	210242.3	Apply the knowledge to appropriate IC as per the design specifications.
	210242.4	Design simple digital systems using VHDL.
	210242.5	Develop simple embedded system for simple real world application

210243 Data Structures and Algorithms	**210243.1**	To discriminate the usage of various structures in approaching the problem solution.
	210243.2	To design the algorithms to solve the programming problems.
	210243.3	To use effective and efficient data structures in solving various Computer Engineering domain problems
	210243.4	To analyse the problems to apply suitable algorithm and data structure.
	210243.5	To use appropriate algorithmic strategy for better efficiency
210244 Computer Organization and Architecture	**210244.1**	Demonstrate computer architecture concepts related to design of modern processors, memories and I/Os.
	210244.2	Analyze the principles of computer architecture using examples drawn from commercially available computers.
	210244.3	Evaluate various design alternatives in processor organization
210245 Object Oriented Programming	**210245.1**	Analyze the strengths of object oriented programming
	210245.2	Design and apply OOP principles for effective programming
	210245.3	Develop programming application using object oriented programming language C++
	210245.4	Percept the utility and applicability of OOP
210246 Digital Electronics Lab	**210246.1**	Realize and simplify Boolean Algebraic assignments for designing digital circuits using K-Maps.
	210246.2	Design and implement Sequential and Combinational digital circuits as per the specifications.
	210246.3	Apply the knowledge to appropriate IC as per the design specifications.
	210246.4	Design simple digital systems using VHDL.
	210246.5	Develop simple embedded system for simple real world application
210247 Data Structures Lab	**210247.1**	To discriminate the usage of various structures in approaching the problem solution.
	210247.2	To design the algorithms to solve the programming problems.
	210247.3	To use effective and efficient data structures in solving various Computer Engineering domain problems
	210247.4	To analyze the problems to apply suitable algorithm and data structure.
	210247.5	To use appropriate algorithmic strategy for better efficiency
210248 Object Oriented Programming Lab	**210248.1**	Analyze the strengths of object oriented programming
	210248.2	Design and apply OOP principles for effective programming
	210248.3	Develop programming application using object oriented programming language C++
	210248.4	Percept the utility and applicability of OOP
210249 Soft Skills	**210249.1**	Effectively communicate through verbal/oral communication and improve the listening skills
	210249.2	Write precise briefs or reports and technical documents.
	210249.3	Actively participate in group discussion / meetings / interviews and prepare & deliver presentations.

	210249.4	Become more effective individual through goal/target setting, self-motivation and practicing creative thinking.
	210249.5	Function effectively in multi-disciplinary and heterogeneous teams through the knowledge of team work, Inter-personal relationships, conflict management and leadership quality.
210250 Audit Course 1 AC1-IV: Smart Cities	**210246.1**	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
	210246.2	Exploration of the city as the most complex human-made organism with a metabolism that can be modelled in terms of stocks and flows
	210246.3	Knowledge about data-informed approaches for the development of the future city, based on crowd sourcing and sensing
	210246.4	Knowledge about the latest research results in for the development and management of future cities
	210246.5	Understanding how citizens can benefit from data-informed design to develop smart and responsive cities

SE Semester – II

SE Computer, Course-2015	COs	Course Outcome
207003 Engineering Mathematics III	**207003.1**	Solve higher order linear differential equation using appropriate techniques for modelling and analysing 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.
210251 Computer Graphics	**210251.1**	Apply mathematics and logic to develop Computer programs for elementary graphic operations
	210251.2	Develop scientific and strategic approach to solve complex problems in the domain of Computer Graphics
	210251.3	Develop the competency to understand the concepts related to Computer Vision and Virtual reality
	210251.4	Apply the logic to develop animation and gaming programs
210252 Advanced Data Structures	**210252.1**	To apply appropriate advanced data structure and efficient algorithms to approach the problems of various domain.
	210252.2	To design the algorithms to solve the programming problems.
	210252.3	To use effective and efficient data structures in solving various Computer Engineering domain problems.
	210252.4	To analyze the algorithmic solutions for resource requirements and optimization
	210252.5	To use appropriate modern tools to understand and analyze the functionalities confined to the data structure usage.

210253 Microprocessor	**210253.1**	To apply the assembly language programming to develop small real life embedded application.
	210253.2	To understand the architecture of the advanced processor thoroughly to use the resources for programming
	210253.3	To understand the higher processor architectures descended from 80386 architecture
210254 Principles of Programming Languages	**210254.1**	To analyze the strengths and weaknesses of programming languages for effective and efficient program development.
	210254.2	To inculcate the principles underlying the programming languages enabling to learn new programming languages.
	210254.3	To grasp different programming paradigms
	210254.4	To use the programming paradigms effectively in application development.
210255 Computer Graphics Lab	**210255.1**	Apply mathematics and logic to develop Computer programs for elementary graphic operations
	210255.2	Develop scientific and strategic approach to solve complex problems in the domain of Computer Graphics
	210255.3	Develop the competency to understand the concepts related to Computer Vision and Virtual reality
	210255.4	Apply the logic to develop animation and gaming programs
210256 Advanced Data Structures Lab	**210256.1**	To apply appropriate advanced data structure and efficient algorithms to approach the problems of various domain.
	210256.1	To design the algorithms to solve the programming problems.
	210256.1	To use effective and efficient data structures in solving various Computer Engineering domain problems.
	210256.1	To analyze the algorithmic solutions for resource requirements and optimization
	210256.1	To use appropriate modern tools to understand and analyze the functionalities confined to the data structure usage.
210257 Microprocessor Lab	**210257.1**	To apply the assembly language programming to develop small real life embedded application.
	210257.2	To understand the architecture of the advanced processor thoroughly to use the resources for programming
	210257.3	To understand the higher processor architectures descended from 80386 architecture
	210257.4	

TE Semester – I		
TE Computer, Course-2012	**Cos**	**Course Outcomes**
310241 Theory of Computation	**310241.1**	Ability to subdivide problems space based on input subdivision using constraints, grammar
	310241.2	Ability to design deterministic turing machine for all input all output , NP Complete
	310241.3	Ability to design non deterministic turing machine for all input all output, NP Hard

310242 Operating Systems Design	**310242.1**	Ability to use EFI based x64 Operating Systems
	310242.2	Ability to use x64 based File Systems and Managers
310243 Data Communication and Wireless Sensor Networks	**310243.1**	Ability to program using data communication methods and algorithm
	310243.2	Ability to setup, configure and program WSN
	310243.3	Ability to use different programming application for WSN, BIGDATA
310244 Database Management Systems Applications	**310244.1**	Ability to handle Advance Databases
	310244.2	Ability to use advanced storage technologies, BIGDATA
	310244.3	Ability to program databases
310245 Computer Forensic and Cyber Applications	**310245.1**	To develop Computer Forensics Awareness
	310245.2	Ability to use Computer Forensics Tools
	310245.3	Ability to use Computer Forensics Cyber Applications
310246 Programming Laboratory I	**310246.1**	Ability to write programs at systems level operating system modules
	310246.2	Ability of problem solving using multi-core, advanced databases techniques and tools
	310246.3	Ability to handle and programming of storage devices
310247 Programming Laboratory II	**310247.1**	The Students must be able perform programming for Data communication
	310247.2	The Students must be able perform programming using Wireless Sensor Networks using multicore programming features.
	310247.3	The Students must be able perform programming for Computer Forensics Cyber Applications
310248 Employability Skills Laboratory	**310248.1**	Ability to understand need of technical competence required for problem solving
	310248.2	Ability to understand employers requirements
	310248.3	Ability to understand professional and group behavioural ethics
TE Semester – II		
Course	**COs**	**Course Outcomes**
310249 Principles of Concurrent and Distributed	**310249.1**	Ability to perform concurrent programming
	310249.2	Ability to perform distributed programming

Programming	**310249.3**	Ability to use concurrent and parallel programming using GPU
310250 Embedded Operating Systems	**310250.1**	Ability to write technical content using Embedded Linux
	310250.2	Ability to write Embedded Programming
310251 Computer Networks	**310251.1**	Ability to setup, install and configure networks
	310251.2	Ability of network programming
	310251.3	Ability to use network protocols, wireless technologies
310252 Software Engineering	**310252.1**	Compare and chose a process model for a software project development
	310252.2	Analyze and model software requirements of a software system
	310252.3	Design and Modelling of a software system with tools
	310252.4	Designing test cases of a software system
	310252.5	Prepare the SRS, Design document, Project plan of a given software system
310253 Digital Signal Processing Applications	**310253.1**	Students will understand the mathematical concepts of signal representation and transformations with their analysis.
	310253.2	Development of ability for generating proper solution to signal processing problems.
	310253.3	Students will be capable of understanding Digital Signal Processing Applications and implementation of signal processing to various applications.
310254 Programming Laboratory-III	**310254.1**	Ability to perform multi-core, Concurrent and Distributed Programming
	310254.2	Ability to perform Embedded Operating Systems Programming
	310254.3	Ability to write Software Engineering Document
	310254.4	Ability to perform Concurrent and Distributed Programming
310255 Programming Laboratory-IV	**310255.1**	Ability to set-up, install and configure network, WSN
	310255.2	Ability to perform Concurrent programming for Networking and WSN
	310255.3	Ability to use different networking protocols and tools
310256 Seminar and Technical Communication Laboratory	**310256.1**	Motivation Statement
	310256.2	Survey Documentation
	310256.3	Proof-of-Concept and related data
	310256.4	Presentation

BE Semester – I		
BE Computer, Course-2012	**COs**	**Course Outcome**
410441 Design & Analysis of Algorithms.	**410441.1**	To survey algorithmic strategies give presentations using open source documentation tools like Latex and soft skill methodologies.
	410441.2	To write mathematical modeling of algorithms for problem solving.
	410441.3	To develop SRS in the UG projects;
	410441.4	To solve problems for multi-core or distributed or concurrent/Parallel/Embedded environments;
410442 Principles of Modern Compiler Design.	**410442.1**	To write symbol tables, different types of grammars to solve problem of parsing.
	410442.2	To design and write simple compiler using FOSS tools.
	410442.3	To practice compiler tools in basic, concurrent, distributed and embedded environments.
	410442.4	To survey and use latest trends and advances in compilers
410443 Smart System Design & Applications.	**410443.1**	To write and survey solution for multidisciplinary case-study using mathematical modeling give presentations using soft skills methodologies;
	410443.2	To write and survey embedded systems applications using machine learning;
	410443.3	To solve problems for multi-core or distributed, concurrent and embedded environments;
410444D (Elective - I) Data Mining Techniques and Applications.	**410444D.1**	To present survey on different learning, classification and data mining foundations.
	410444D.2	To write programs and methods for data Mining applications.
	410444D.3	To solve problems for multi-core or distributed, concurrent/Parallel environments.
410445B (Elective - II) Pervasive Computing	**410445B.1**	To present a survey on pervasive computing building blocks.
	410445B.2	To create presentations using pervasive computing techniques and devices.
	410445B.3	To solve problems for multi-core or distributed, concurrent/Parallel environments.
410446 Computer Laboratory-I	**410446.1**	To write efficient mathematical design, analysis and testing of algorithmic assignments.
	410446.2	To debug and demonstrate the Testing of functioning using Software Engineering for OO-programming.
	410446.3	To write programs using advanced FOSS tools and technologies
	410446.4	To write test case using multi-core or distributed, concurrent/Parallel environments.

410447 Computer Laboratory - II	**410447.1**	To write mathematical modelling for problem solving.
	410447.2	To write programs for smart devices using FOSS Tools.
	410447.3	To write Programs for gamifications.
	410447.4	To write test cases to solve problems for pervasiveness embedded security and NLP applications.
	410447.5	To write test cases for multi-core or distributed, concurrent/Parallel environments.
410448 Project	**410448.1**	To write problem solutions in projects using mathematical modelling, using FOSS programming tools and devices or commercial tools;
	410448.2	To write SRS and other software engineering documents in the project report using mathematical models developed and NP-Hard analysis;
	410448.3	To write test cases using multi-core, distributed, embedded, concurrent/Parallel environments;
	410448.4	To write conference paper;
	410448.5	To demonstrate presentation, communication and team-work skills.
BE Semester – II		
BE Computer, Course-2012	**COs**	**Course Outcome**
410449 Software Design Methodologies and Testing.	**410449.1**	To present a survey on design techniques for software system.
	410449.2	To present a design and model using UML for a given software system.
	410449.3	To present a design of test cases and implement automated testing for client server, Distributed, mobile applications.
410450 High Performance Computing.	**410450.1**	To transform algorithms in the computational area to efficient programming code for modern computer architectures.
	410450.2	To write, organize and handle programs for scientific computations.
	410450.3	To create presentation of using tools for performance optimization and debugging
	410450.4	To present analysis code with respect to performance and suggest and implement performance improvements.
	410450.5	To present test cases to solve problems for multi-core or distributed, concurrent/Parallel environments.
Elective - III 410451D Cyber Security	**410451D.1**	To write a survey on cyber security concepts.
	410451D.2	To create a case study report on practice administrating using Cyber Security open source tools.
	410451D.3	To write problem solutions for multi-core or distributed, concurrent/Parallel environments.

Elective - IV 410452C Mobile Applications	**410452C.1**	To write a survey on tools and architectures for Mobile Applications.
	410452C.2	To write using mathematical models the problem solutions using Mobile Applications.
	410452C.3	To write develop mobile applications using open source tools.
410453 Computer Laboratory - III	**410453.1**	To write problem solutions using mathematical modelling.
	410453.2	To write reports of application of software design methods and testing.
	410453.3	To write programs using FOSS tools.
	410453.4	To write problem solutions using multi-core or distributed, concurrent/Parallel environments.
410454 Computer Laboratory - IV	**410454.1**	To write programs to develop applications using BIA Technologies using mathematical modelling.
	410454.2	To write programs using OR and Mobile Programming Technologies using mathematical modelling.
	410454.3	To write programs using FOSS tools and devices.
	410454.4	To write problem solutions using multi-core or distributed, concurrent/Parallel environments
410455 Project	**410455.1**	To write review SRS, reliability testing reports, and other software engineering documents in the project report;
	410455.2	To write problem solution using multi-core, distributed, embedded, concurrent/Parallel environments;
	410455.3	To write the test cases to demonstrate the results of the project;
	410455.4	To write conference paper;
	410455.5	To write code using FOSS tools and technologies or propitiatory Tools as per requirements;
	410455.6	To practice presentation, communication and team-work skills