

## Department Of Information Technology

### Course Outcomes (COs)-R17

**SEMESTER: 1**

**COURSE YEAR: 2017-2018**

<b>Course Outcomes for First Year First Semester Course</b>		
COURSE	COURSE OUTCOMES	
ENGLISH B17BS1101	CO1	Understand the rudiments of LSRW Skills, comprehension and fluency of speech.
	CO2	Gain confidence and competency in vocabulary and grammar.
	CO3	Listen, speak, read and write effectively in both the academic and non-academic environment.
	CO4	Extend his/her reading skills towards literature.
	CO5	Strengthen his/her analytical and compositional skills.
MATHEMATICS-I B17 BS 1102	CO1	Solve linear ordinary differential equations of first order and first degree. Also will be able to apply the knowledge in simple applications such as Newtons law of cooling, orthogonal trajectories and simple electrical circuits.
	CO2	Solve linear ordinary differential equations of second order and higher order. Also will be able to apply the knowledge in simple applications such as LCR circuits and Simple harmonic motion
	CO3	Determine Laplace transform and inverse Laplace transform of various functions
	CO4	Use Laplace transforms to solve a linear ODE.
	CO5	Calculate total derivative, Jacobian and maxima/minima of functions of two variables.
MATHEMATICS-II B17BS1103	CO1	Find a real root of algebraic and transcendental equations using different methods.
	CO2	Know the relation between the finite difference operators. Determine interpolation polynomial for a given data.
	CO3	Evaluate numerically certain definite integrals applying Trapezoidal and Simpsons rules.
	CO4	Solve a first order ordinary differential equation by Euler and RK methods.
	CO5	Find Fourier series of a given function satisfying Dirichlet conditions. Find half range cosine and sine series for appropriate functions.
	CO6	Find Fourier transforms, Fourier cosine and sine transforms of appropriate functions and evaluate certain integrals using inverse transforms and Fourier integral.
Engineering Physics B17 BS 1104	CO1	Learn the basic concepts of interference and diffraction of light and its applications
	CO2	Understand the science of producing high intensity light beams for technological applications and also understand the propagation of light waves in optical fiber in various applications.
	CO3	Understand the inter relationship of electric and magnetic fields and learn ultra sonic's as a tool for technological applications
	CO4	Learn the behaviour of particles at the very microscopic level by using

		wave nature of particles and understand the behaviour of materials and be able to classify them using the band theory of solids
	CO5	Learn the basics of structures of solid materials and nano material preparation Techniques/methods.
<b>COMPUTER PROGRAMMING USING C B17 CS 1101</b>	CO1	Understand the basic terminology used in computer programming
	CO2	Write, compile and debug programs in C language.
	CO3	Use different data types in a computer program.
	CO4	Design programs involving decision structures, loops and functions.
	CO5	Explain the difference between call by value and call by reference
	CO6	Understand the dynamics of memory by the use of pointers
	CO7	Use different data structures and create/update basic data files.
<b>ENVIRONMENTAL STUDIES B17 CE 1101</b>	CO1	To bring awareness among the students about the nature and natural ecosystems
	CO2	Sustainable utilization of natural resources like water, land, energy and air.
	CO3	Resource pollution and over exploitation of land, water, air and catastrophic (events) impacts of climate change, global warming, ozone layer depletion, marine, radioactive pollution etc to inculcate the students about environmental awareness and safe transfer of our mother earth and its natural resources to the next generation
	CO4	Safe guard against industrial accidents particularly nuclear accidents .
	CO5	Constitutional provisions for the protection of natural resource
<b>ENGINEERING PHYSICS LAB B17 BS 1106</b>	CO1	Students get hands on experience in setting up experiments and using the instruments/equipment individually
	CO2	Get introduced to using new/ advanced technologies and understand their significance.
<b>ENGLISH COMMUNICATIONSKILLS LAB- I B17 BS 1108</b>	CO1	A study of the communicative items in the laboratory will help the students become successful in the competitive world..
	CO2	Students improve their speaking skills in real contexts
	CO3	Students learn standard pronunciation and practice it daily discourse.
	CO4	Students give up their communicative barriers.
<b>C PROGRAMMING LAB &amp; HARDWARE FUNDAMENTALS B17 CS 1102</b>	CO1	Apply and practice logical ability to solve the problems.
	CO2	Understand C programming development environment, compiling, debugging, and linking and executing a program using the development environment.
	CO3	Analyzing the complexity of problems, Modularize the problems into small modules and then convert them into programs..
	CO4	Understand and apply the in-built functions and customized functions for solving the problems
	CO5	Understand and apply the pointers, memory allocation techniques and use of files for dealing with variety of problems.
	CO6	Document and present the algorithms, flowcharts and programs in form of user manuals.
	CO7	Identification of various computer components, Installation of software
<b>Course Outcomes for First Year Second Semester Course</b>		
<b>ENGLISH – II B17 BS 1201</b>	CO1	To comprehend the speech of people belonging to different backgrounds and regions.
	CO2	Understand the importance of speaking and writing for personal and

		professional communication and practice it in real contexts
	CO3	To express fluently and accurately in social discourse
	CO4	Participate in group activities like role-plays, discussions and debates
	CO5	Identify the discourse features, and improve intensive and extensive reading skills.
MATHEMATICS – III <b>B17 BS 1203</b>		Determine rank, and solve a system of linear simultaneous equations numerically using various matrix methods
		Determine Eigen values and Eigen vectors of a given matrix, Reduce a Quadratic form to its canonical form and classify
		Evaluate double integrals over a region and triple integral over a volume
ENGINEERING CHEMISTRY <b>B17 BS 1205</b>	CO1	At the end of the course the students learn the advantages and limitations of plastic materials and their use in design.
	CO2	Fuels which are used commonly and their economics, advantages and limitations are discussed.
	CO3	Students gained Knowledge reasons for corrosion and some methods of corrosion control.
	CO4	Students understands the impurities present in raw water, problems associated with them and how to avoid them.
	CO5	Similarly students understand liquid crystals and semi conductors. Students can gain the building materials , solar materials, lubricants and energy storage devices.
ENGINEERING DRAWING <b>B17 ME 1201</b>	CO1	Apply principles of drawing to represent dimensions of an object
	CO2	Construct polygons and engineering curves
	CO3	Draw projections of points, lines, planes and solids
	CO4	Represent the object in 3D view through isometric views.
	CO5	Convert the isometric view to orthographic view and vice versa.
OBJECT-ORIENTED PROGRAMMING THROUGH C++ <b>B17 CS 1202</b>	CO1	Write, compile and debug programs in C++ language. Use different data types in a computer program.
	CO2	Design programs involving decision structures, loops and functions.
	CO3	Explain classes and abstract classes and objects, abstraction and encapsulation, inheritance, polymorphism, constructors, access control and overloading.
	CO4	Solve a given application problem by going through the basic steps of program specifications, analysis, design, implementation and testing within the context of the object oriented paradigm.
ELEMENTS OF ELECTRONICS ENGINEERING <b>B17 EC 1201</b>	CO1	Understand the basic concepts of transport of charge carriers in semiconductors ,drift and diffusion currents, physical structure , operation , V-I characteristics of semiconductor diode.
	CO2	Understand the basic concepts of special types of diodes like Zener Diode, LED, Photo Diode and tunnel diode, rectifier circuits with and without filters.
	CO3	Understand the physical structure, operation, input and output characteristics of BJT in CE,CB,CC circuit configurations.
	CO4	Understand the basic concepts of transistor biasing and thermal stabilization.
	CO5	Understand the physical structure, operation, characteristics and circuit models of JFET's and MOSFET's.
ENGINEERING	CO1	An understanding of Professional and develop confidence on recent trends

CHEMISTRY LAB <b>B17 BS 1207</b>	CO2	Able to gain technical knowledge of measuring, operating and testing of chemical instruments and equipments
	CO3	Acquire ability to apply knowledge of chemistry.
	CO4	Exposed to the real time working environment.
	CO5	Demonstrate the ability to learn Principles, design and conduct experiments.
	CO6	Ability to work on laboratory and multidisciplinary tasks.
ENGLISH COMMUNIC ATION SKILS LAB- II <b>B17 BS 120</b>	CO1	A study of the communicative items in the laboratory will help the students become successful in the competitive world.
	CO2	Students enhance their presentation skills.
	CO3	Students participate in group discussions and improve their team skills.
	CO4	Students confidently face the interviews.
OBJECT ORIENTED PROGRAMMI NG LAB <b>B17 CS 1205</b>	CO1	Explain what constitutes an object-oriented approach to programming and identify potential benefits of object-oriented programming over other approaches.
	CO 2	Apply an object-oriented approach to developing applications of varying complexities.
<b>Course Outcomes for Second Year First Semester Course</b>		
DATA STRUCTURS <b>B17IT2101</b>	CO1	Apply advanced data structure strategies for exploring complex data structures and implement data structures like stacks, queues
	CO2	Implement data structures on single, circular and double linked lists..
	CO3	Implement different operations on trees
	CO4	Apply graphs to real time applications.
	CO5	Perform sorting and searching using different algorithms.
JAVA PROGRAMMI NG <b>B17 IT 2102</b>	CO1	Able to solve real world problems using OOP techniques.
	CO2	Able to understand the use of abstract classes.
	CO3	Able to solve problems using java I/o classes.
	CO4	Able to develop multithreaded applications.
	CO5	Able to develop multithreaded applications.
	CO6	Able to design GUI based applications.
DATACOMM UNICATIONS <b>B17 IT 2104</b>	CO1	Understand basic concepts related communication systems.
	CO2	Understand different transmission Media.
	CO3	Understand concepts related to data communication hardware.
	CO4	Understand basic functionality of modems.
	CO3	Solve different counting problems
	CO4	Solve the recurrence relations which occur in many fields
COMPUTER GRAPHICS <b>B17 IT 2103</b>	CO1	The students will understand graphics principles and graphics hardware.
	CO2	The students can demonstrate geometrical transformations
	CO3	The students can create interactive graphics applications and demonstrate computer graphics animation.
DIGITAL LOGIC DESIGN <b>B17 IT 2105</b>	CO1	An ability to define different number systems, binary addition and subtraction, 2's complement representation and operations with this representation. The different Boolean algebra theorems and apply them for logic functions.
	CO2	An ability to define the Karnaugh map for a few variables and perform an algorithmic reduction of logic functions
	CO3	An ability to define the following combinational circuits: multiplexer,

		de-multiplexers encoders/decoders, comparators, arithmetic-logic units and to be able to a build simple circuits
	CO4	An ability to understand asynchronous and synchronous sequential circuits, like counters and shift registers.
	CO5	An ability to understand memories like RAM and ROM, Programmable Logic Array and Programmable Array Logic.
DATA STRUCTURE S LAB <b>B17 IT 2106</b>	CO1	Apply advanced data structure strategies for exploring complex data structures.
	CO2	Implement data structures like stacks, queues
	CO3	Implement data structures on single, circular and double linked lists
	CO4	Implement different operations on trees.
	CO5	Apply graphs to real time applications.
	CO6	Perform sorting and searching using different algorithms.
JAVA PROGRAMMI NG LAB <b>B17IT2107</b>	CO1	Students will be able to understand compiling and interpreting programs
	CO2	Students will be able to Explore features of Object Oriented Programming.
	CO3	Students will be able to implement various java concepts
	CO4	Students will be able to Develop java Programs to implement applets
	CO5	Students will be able to Develop java Programs to generate and handle events.
BASIC CODING <b>B17 IT 2108</b>	CO1	Know about Control Structures, Loop Structures and branching in programming
	CO2	Know about various searching and sorting methods.
	CO3	Know about Functions, Recursions and Storage Classes.
	CO4	Know about Structures and Unions.
	CO5	Know different Operating System concepts.
	CO6	Differentiate OSI Model Vs. TCP/IP suite.
ENGLISHPR OFICIENCY-I <b>B17BS2106</b>	CO1	Improve speaking skills
	CO2	Enhance their listening capabilities.
	CO3	Learn and practice the skills of composition writing.
	CO4	Enhance their reading and understanding of different texts
	CO5	Improve their inter-personal communication skills
	CO6	Be confident in presentation skills.
<b>Course Outcomes for Second Year Second Semester Course</b>		
COMPUTER ORGANIZATI ON B17IT2201	CO1	Knowledge about major components of a computer such as processor, memory and I/O modules along with their interconnections internally with outside world.
	CO2	Detailed idea about architecture of central processing unit, functions of control unit, memory, I/O devices and their issues
	CO3	Simple and multiple processor organization and their issues.
PROBABILIT Y, STATISTIC S AND QUEUEI G THEORY <b>B17BS2202</b>	CO1	Identify the random variable as discrete/continuous and analyse it.
	CO2	Predict the distribution suitable for the given data from its moments.
	CO3	Measure the intensity of association between the variables.
	CO4	Fit a best suitable Curve for the given data.
	CO5	Decide the test applicable for giving inference about Population Parameter based on Sample statistic.
	CO6	Make business decisions about the resources needed to provide a

		service in day-to-day life applications including telecommunication, traffic engineering, computing and the design of factories, shops, offices and hospitals.
MICROPROCESSOR I B17 IT 2202	CO1	Student will be able to identify microprocessor and microcomputers and will be able to describe 8085 MP architecture and classify instructions .
	CO2	Student will be able to state and illustrate 8085 programming techniques and solve code conversions, ISR, subroutines, operations to examine results.
	CO3	Student will be able to describe 8086 MP architecture and classify instruction set of 8086
	CO4	Student will be able to state and illustrate 8086 programming techniques and solve code conversions, ISR, subroutines, operations to examine results.
FILE STRUCTURES B17 IT 2203	CO1	Student will be able to identify the basic operations on a file.
	CO2	Student will be able to state and illustrate various storage & retrieval mechanisms
	CO3	Student will be able to describe various compression methods & advantages of them
	CO4	student will be able to describe various index structures.
	CO5	Student will be able to state and illustrate hashing methods for direct access of data from files
UNIX AND SHELL PROGRAMMING B17IT2204	CO1	Able to working on the basic commands of UNIX operating system.
	CO2	File processing projects will require data organization, problem solving and research
	CO3	Scripts and programs will demonstrate effective use of structured programming.
	CO4	Scripts and programs will be accompanied by printed output demonstrating completion of a test plan
	CO5	Able to understand and handle the process management using system calls
FORMAL LANGUAGE AND AUTOMATA THEORY B17IT2205	CO1	Students will be able to design Finite Automata for languages with concepts of Regular Sets and Regular Grammars
	CO2	Students will be able to Apply concepts of context free Grammars and able to design Push Down Automata from the given CFG.
	CO3	Students will be able to design a Turing Machine from the given language .
	CO4	Students will be able to identify different types of languages using Chomsky Hierarchy and apply concepts of Un-decidability on problems
PYTHON PROGRAMMING LAB B17IT2206	CO1	Making Software easily right out of the box
	CO2	Experience with an interpreted Language.
	CO3	To build software for real needs
	CO4	Prior Introduction to testing software
DIGITAL ELECTRONICS AND MICROPROCESSORS LAB B17IT2207	CO1	Student can examine Digital trainer kit and microprocessor kit
	CO2	Student can calculate logical functions for coders, decoders, multiplexers and counters using digital trainer kits
	CO3	Student can experiment various Arithmetic and logical operations using 8085 instructions
	CO4	Student can experiment various Arithmetic and logical operations using

		8086 instructions in MASM assembler.
ADVANCED CODING B17IT2208	CO1	Acquire coding knowledge on essential of modular programming
	CO2	Acquire Programming knowledge on linked lists
	CO3	Acquire coding knowledge on ADT
	CO4	Acquire knowledge on time complexities of different methods
	CO5	Acquire Programming skill on Java libraries and Collections
PROFESSIONAL ETHICS & HUMAN VALUES B17BS2204	CO1	By the end of the course student should be able to understand the importance of ethics and values in life and society .
ENGLISH PROFICIENCY-II B17BS2206	CO1	Develop the skills of taking and making notes
	CO2	Interpret the pictures appropriately and effectively.
	CO3	Read, comprehend and infer a given piece of writing effectively
	CO4	Learn and practice the skills of Research writing.
	CO5	Communicate well through various forms of writing.
<b>Course Outcomes for Third Year First Semester Course</b>		
COMPUTER NETWORKS B17IT3101	CO1	Explain the functions of the different layer of the OSI Protocol.
	CO2	Draw the functional block diagram of wide-area networks (WANs), local area networks (LANs) and Wireless LANs (WLANs) describe the function of each block.
	CO3	For a given requirement (small scale) of wide-area networks (WANs), local area networks (LANs) and Wireless LANs (WLANs) design it based on the market available component
	CO4	For a given problem related TCP/IP protocol developed the network programming.
	CO5	Configure DNS, EMAIL, File Transfer Protocol (FTP), HTTP, Bluetooth, using open source available software and tools
E-COMMERCE B17IT3102	CO1	Ability to discuss the e-Commerce process. Describe an example of system architecture for an e-Business. List the seven major elements of web design.
	CO2	Ability to Identify and explain fundamental web site tools including design tools, programming tools, and data processing tools. Identify the major electronic payment issues and options.
	CO3	Ability to discuss security issues and explain procedures used to protect against security threats.
	CO4	Ability to Identify and discuss management issues underlying e-Commerce issues including organizational structure, strategic planning, goal setting, corporate social responsibility, changing market intermediaries, resource allocation and customer service.
COMPILER DESIGN B17IT3103	CO1	Ability to design, develop, and implement a compiler for any language.
	CO2	Able to use lex and yacc tools for developing a scanner and a parser.
	CO3	Able to design and implement LL and LR parsers.
	CO4	Able to design algorithms to perform code optimization in order to improve the performance of a program in terms of space and time complexity.
	CO5	Ability to design algorithms to generate machine code

OPERATING SYSTEMS <b>B17IT3104</b>	CO1	Evaluate and discriminate various Operating systems and Structures.
	CO2	Explore Design issues of various Process Scheduling algorithms.
	CO3	Apply the principles of concurrency.
	CO4	Select suitable Deadlock handling algorithm
	CO5	Compare and contrast various memory management schemes.
	CO6	Design and Implement a prototype file systems
	CO7	Explore Basic features of Linux and Windows Operating systems.
DATA BASE MANAGEMEN T SYSTEMS <b>B17 IT3105</b>	CO1	Describe a relational database and object-oriented database.
	CO2	Create, maintain and manipulate a relational database using SQL
	CO3	Describe ER model and normalization for database design.
	CO4	Examine issues in data storage and query processing and can formulate appropriate solutions.
	CO5	Understand the role and issues in management of data such as efficiency, privacy, security, ethical responsibility, and strategic advantage .
	CO6	Design and build database system for a given real world problem.
DESIGN AND ANALYSIS OF ALGORITHMS <b>B17IT3106</b>	CO1	Students will be able to understand, apply and Analyze the algorithms using asymptotic notations and Divide-and-Conquer technique on computer science problems.
	CO2	Student will be able to understand, apply and analyze Greedy technique on computer science problems.
	CO3	Student will be able to understand, apply and analyze Dynamic Programming on computer science problems
	CO4	Student will be able to understand, apply and analyze Basic Traversal and Search techniques and Backtracking on computer science problems.
	CO5	Student will be able to understand, apply and analyze Branch-and-Bound and algebraic problems on computer science problems
DATA BASE MANAGEMEN T SYSTEMS LAB <b>B17IT3107</b>	CO1	Understand, appreciate and effectively explain the underlying concepts of database technologies.
	CO2	Design and implement a database schema for a given problem-domain normalize a database.
	CO3	Populate and query a database using SQL DML/DDDL commands.
	CO4	Declare and enforce integrity constraints on a database using a state-of-the-art RDBMS
	CO5	Programming PL/SQL including stored procedures, stored functions, cursors, packages.
	CO6	Design and build a GUI application using a 4GL
UNIX AND OPERATING SYSTEMS LAB <b>B17IT3108</b>	CO1	To use Unix utilities and perform basic shell control of the utilities
	CO2	To use the Unix file system and file access control.
	CO3	To use of an operating system to develop software
	CO4	Work confidently in Unix/Linux environment
	CO5	Write shell scripts to automate various tasks
	CO6	Master the basics of Linux administration
COMPETITIVE CODING-I <b>B17 BS3104</b>	CO1	Able to solve problems using java collection framework and I/o classes.
	CO2	Able to develop multithreaded applications with synchronization.
	CO3	Able to develop applets for web applications.



	CO4	Able to design GUI based applications
<b>Course Outcomes for Third Year Second Semester Course</b>		
WEBTECHNOLOGIES <b>B17IT3201</b>	CO1	Analyze a web page and identify its elements and attributes.
	CO2	Create web pages using XHTML and Cascading Styles sheets..
	CO3	Build dynamic web pages.
	CO4	Build web applications using PHP. Programming through PERL and Ruby .
OBJECT ORIENTED SOFTWARE ENGINEERING <b>B17IT3202</b>	CO1	Ability to define a problem and perform Requirements Engineering
	CO2	Ability to draw UML diagrams for the requirements gathered.
	CO3	Ability to implement the designed problem in Object Oriented Programming Language.
	CO4	Test whether all the requirements specified have been achieved or not
CRYPTOGRAPHY & NETWORK SECURITY <b>B17IT3203</b>	CO1	Students will be able to understand, apply and analyze the algorithms on security problems.
	CO2	Student will be able to understand, apply and analyze symmetric and asymmetric approaches.
	CO3	Student will be able to understand, apply and analyze security measurements.
	CO4	Student will be able to understand, apply and analyze various malicious software.
STATISTICS WITH R – PROGRAMMING <b>B17IT3204</b>	CO1	Use R for statistical programming, computation, graphics, and modelling .
	CO2	Write functions and use R in an efficient way.
	CO3	Fit some basic types of statistical models.
	CO4	Use R in their own research.
	CO5	Be able to expand their knowledge of R on their own.
DATA WAREHOUSING AND BUSINESS INTELLIGENCE <b>B17IT3205</b>	CO1	Describe the scope and application of business intelligence and decision support.
	CO2	Design systems for sourcing and structuring data to provide an integrated, non-volatile collection of data for decision support using data warehouses.
	CO3	Design multidimensional data models and implement those using star schemas and Relational databases.
	CO4	Communicate and foster realistic expectations of the role of OLAP technology.
ARTIFICIAL INTELLIGENCE <b>B17IT3206</b>	CO1	Possess the ability to formulate an efficient problem space for a problem expressed in English.
	CO2	Possess the ability to select a search algorithm for a problem and characterize its time and space complexities.
	CO3	Possess the skill for representing knowledge using the appropriate technique
	CO4	Possess the ability to apply AI techniques to solve problems of Game Playing, Expert Systems, Machine Learning and Natural Language Processing

SEMANTIC WEB AND SOCIAL NETWORKS <b>B17IT3207</b>	CO1	Ability to understand and knowledge representation for the semantic web.
	CO2	Ability to create ontology.
	CO3	Ability to build a blogs and social networks
DIGITAL SIGNAL PROCESSING <b>B17EC3210</b>	CO1	Perform frequency transforms for the signals.
	CO2	Design IIR and FIR filters.
	CO3	Finite word length effects in digital filters.
ROBOTICS <b>B17ME3211</b>	CO1	Be able to use matrix algebra and Lie algebra for computing the kinematics of robots
	CO2	Be able to calculate the forward kinematics and inverse kinematics of serial and parallel robots.
	CO3	Be able to calculate the Jacobian for serial and parallel robot
	CO4	Be able to do the path planning for a robotic system
	CO5	Be proficient in the use of Maple or Matlab for the simulation of robots
IMAGE PROCESSING <b>B17IT3208</b>	CO1	Ability to develop algorithms for fundamental concepts in Image processing.
	CO2	Ability to perform image enhancement , image compression and image segmentation using various methods.
	CO3	Ability to implement Image transformation techniques
OPERATION S RESEARCH <b>B17IT3209</b>	CO1	Understand the Methodology of Operations Research.
	CO2	Formulate and Model the Linear Programming Problems, Transportation and Assignment Problems
	CO3	solving methods for LPP, duality, and sensitivity analysis
	CO4	Check for degeneracy and other special cases in above models
	CO5	Construct Network flows and solve them under certainty/uncertainty.
	CO6	Model Inventory control for EOQ.
	CO7	Formulate Competitive models using Game theory and solve them for Optimal Decisions.
WEB TECHNOLOG IES LAB <b>B17IT3210</b>	CO1	To implement XML and XSLT for web applications
	CO2	Develop Dynamic web content using Java Servlets and JSP
	CO3	To develop JDBC connections and implement a complete Dynamic web Application
SOFTWARE ENGINEERIN G AND MINI PROJECT LAB <b>B17IT3211</b>	CO1	Students will be Construct, Design and implement complex software solutions.
	CO2	Students will be able to test and document the software.
	CO3	Students will be capable of working as part of a software team and develop significant projects under a tight deadline.
	CO4	Students will be able apply the deep knowledge of the technologies they used for implementing their project.
	CO5	Students will be able to assess the changes required for customization in project management.
<b>Course Outcomes for Fourth Year First Semester Course</b>		
MOBILE COMPUTING <b>B17 IT 4102</b>	CO1	Understand the principles and paradigms of mobile computing technologies
	CO2	Analyze technical issues related to new paradigm and come up with a solution(s).
	CO3	Analyze MAC protocols and mobile network layer protocols

	CO4	Illustrate data base issues and dissemination in mobile computation.
MANAGERIAL ECONOMICS AND FINANCIAL ACCOUNTANCY <b>B17BS4101</b>	CO1	The Learner is equipped with the knowledge of estimating the Demand and demand elasticities for a product.
	CO2	The knowledge of understanding Cost and its types and ability to calculate BEP
	CO3	The pupil is also ready to understand the nature of different markets.
	CO4	The Learner is able to understand Pricing Practices prevailing in today's business world
	CO5	The Learner is able to prepare Financial Statements and know how to calculate Profit & Loss for a firm
	CO6	The Learner can able to know Types of capital and their sources and know how to calculate Depreciation
BIG DATA ANALYTICS <b>B17 IT 4103</b>	CO1	To Understand the existing technologies and the need of distributed files systems to analyze the Big Data
	CO2	To Implement and analyze Map-Reduce programming model for better optimization on Big Data.
	CO3	To Collect, manage, store, query, and analyze Big Data; and identify the need of interfaces to perform I/O operations in Hadoop .
	CO4	To Identify the need of Modern tools, viz., Pig and Hive and its applications on Big Data Analytics
INFORMATION RETRIEVAL SYSTEM <b>B17 IT 4104</b>	CO1	Students will use Basic Data Structures and Algorithms to retrieve for information
	CO2	Students ability to analyze a sorted array and build an Inverted file
	CO3	Students ability to apply PAT trees for indexing Text documents
	CO4	Students ability to evaluate stemming process for inverted files
	CO5	Student will construct Thesaurus
	CO6	Students will apply latest technologies and Tools for linking, describing and searching the web for information retrieval
INTERNET OF THINGS <b>B17 IT 4105</b>	CO1	Understand and acquire knowledge of the security and ethical issues of the Internet of Things
	CO2	Develop critical thinking and programming skills with Python related to IoT
	CO3	Demonstrate hardware usage and cloud services for IoT application
	CO4	Develop designing knowledge and understand designing case studies for IoT
MULTIMEDIA PROGRAMMING <b>B17 IT 4106</b>	CO1	Students are able to understand various formats of data representation for text, audio, video.
	CO2	Student is able to understand & analyze various compression mechanisms for image, audio, video.
EMBEDDED SYSTEMS B17 IT 4107	CO1	Analyzing Embedded Systems, Interrupts and Software Architectures.
	CO2	Applying RTOS and Inter Task Communication services.
	CO3	Design RTOS, Embedded Software development Tools
	CO4	Analyzing Embedded Software Debugging Techniques and IoT.
SOFTWARE PROJECT MANAGEMENT	CO1	Understand the basic concepts and issues of software project management
	CO2	To gain knowledge on the principles and techniques of software project management to effectively Planning the software projects

<b>B17 IT 4108</b>	CO3	To implement the effort estimation & activity Planning Estimation techniques for software projects management
	CO4	To develop the skills for tracking, controlling and creating software deliverables that address real-world management challenges and risks
<b>MACHINE LEARNING B17 IT 4109</b>	CO1	Recognize the characteristics of machine learning that make it useful to real world Problems
	CO2	Able to implement various machine learning algorithms as supervised, semi supervised and Unsupervised.
	CO3	Have heard of a few machine learning toolboxes, Be able to use support vector machines, regularized regression algorithms.
	CO4	Understand the concept behind neural networks for implementing non-linear functions
<b>MOBILE COMPUTING LAB B17 IT 4111</b>	CO1	To analyze the strengths and limitations of the tools and devices for development of pervasive computing systems
	CO2	To explore the characteristics of different types of mobile networks on the performance of a pervasive computing system
	CO3	To analyze and compare the performance of different data dissemination techniques and algorithms for mobile real-time applications
	CO4	To develop an attitude to propose solutions with comparisons for problems related to pervasive computing system through investigation
<b>CRYPTOGRAPHY AND NETWORKING SECURITY LAB : B17 IT 4112</b>	CO1	Identify basic security attacks and services
	CO2	To use symmetric and asymmetric key algorithms for cryptography
	CO3	To master symmetric and asymmetric cryptography. Applications
<b>Course Outcomes for Fourth Year Second Semester Course</b>		
<b>MANAGEMENT AND ORGANISATIONAL BEHAVIOUR B17 BS 4201</b>	CO1	Explain management functions and principles
	CO2	Will be able to describe the concepts of functional management that is HRM and Marketing functions
	CO3	The learner is able to recognise strategically contemporary management practices and describe corporate planning process
	CO4	Will be able to get discuss about vision, mission, goal, objective and a strategy based on which the corporate planning depends
	CO5	The learner can discuss about individual behaviour and motivational theories
<b>CLOUD COMPUTING B17 IT 4201</b>	CO1	Understanding the key dimensions of the challenge of Cloud Computing
	CO2	Assessment of the economics, financial, and technological implications for selecting cloud computing for own organization
	CO3	Assessing the financial, technological, and organizational capacity of employer's for actively initiating and installing cloud-based applications.
	CO4	Assessment of own organizations' needs for capacity building and training in cloud computing-related IT areas.
<b>CYBER</b>	CO1	Student remember Cyber Security architecture principles and Identify

<b>SECURITY B17 IT 4202</b>		System and application security threats and vulnerabilities
	CO2	Understand different classes of attacks and Cyber Security incidents to apply appropriate response
	CO3	Apply risk management processes, practices and of decision making outcomes of Cyber Security scenarios..
<b>CLOUD COMPUTING B17 IT 4201</b>	CO1	Understanding the key dimensions of the challenge of Cloud Computing
	CO2	Assessment of the economics, financial, and technological implications for selecting cloud computing for own organization
	CO3	Assessing the financial, technological, and organizational capacity of employer's for actively initiating and installing cloud-based applications.
	CO4	Assessment of own organizations' needs for capacity building and training in cloud computing-related IT areas.
<b>DATA MINING LAB : B17 IT 4205</b>	CO1	Ability to preprocess any data set by applying different pre processing techniques
	CO2	Understand different classes of attacks and Cyber Security incidents to apply appropriate response
	CO3	Apply risk management processes, practices and of decision making outcomes of Cyber Security scenarios..
<b>PROJECT WORK B17 IT 4207</b>	CO1	Identify a current problem through literature/field/case studies
	CO2	Identify the background objectives and methodology for solving the same.
	CO3	Design a technology/ process for solving the problem.
	CO4	Develop a technology/ process for solving the problem.
	CO5	Evaluate that technology/ process at the laboratory level.