VIJAYA INSTITUTE OF TECHNOLOGY FOR WOMEN

An ISO 9001:2015 Certified Institute, Approved by AICTE, Affiliated to JNTU Kakinada, AP

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College Code: NP, Enikepadu, Vijayawada-521108

Department of Computer Science and Engineering

List of Course Outcomes

Batch: 2016(R16)

Year & Sem	Subject Code	Course Code	Course Name	At the end of the course, the student will be able to
I-I		HS1101	English	CO1:Develop their knowledge on different fields and serve the society accordingly.
				CO2:Get motivated and adopt road safety measures.
				CO3:Creates an awareness in the readers that mass production is ultimately detrimental to biological survival
				CO4:To choose a source of energy suitable for rural India
				CO5:Acquisite writing skills
				CO6:Indentify safety measures against different varieties of accidents at home and in the work place .
I-I		BS1101	Mathematics - I	CO1:Solve linear differential equations of first order and first degree and their applications
				CO2:Solve linear differential equations of second and higher order and their applications to various engineering fields.
				CO3:Determine Laplace transform and inverse Laplace transform of various functions. Apply the Laplace transforms for Solving Linear Differential Equations
				CO4:Calculate total derivative, Jocobian and minima of functions of two variables
				CO5:Formation of Partial differential Equations and solution of first order linear and non linear equations.

				CO6: Solve Linear Partial differential Equations of higher order and Classification of second order Partial differential Equations .
I-I		BS1106	Applied Chemistry	CO1:Analyze the advantages and limitations of plastic materials and their use in designing analysis.
				CO2:Know the properties, limitations and advantages of Fuels namely Coal, Petrol, Diesel and Biodiesel etc.
				CO3:Redesign engineering products by making use of concepts as on construction and working methodologies of electrodes, batteries and fuel cells and classify the reasons for corrosion and methods to control corrosion.
				CO4:Adapt Nanomaterials for modern advances of engineering technology.
				CO5:Prepare Semiconductors and gain knowledge about phenomenon of semiconductors
				CO6:Design models for energy by different natural sources and gets exposure about alternative fuels and their advantages and limitations
I-I		ES1112	Fundamentals of Computer Science	CO1: Illustrate the concept of input and output devices of Computers and how it works and recognize the basic terminology used in computer programming.
				CO2: Recognize the Computer networks, types of networks and topologies.
				CO3: Summarize the concepts of Operating Systems and Databases.
				CO4: Recite the Advanced Computer Technologies like Distributed Computing & Wireless Networks.
I-I		ES1103	Engineering Drawing	CO1: The student will learn how to visualize 2D & 3D objects.

I-II		BS1202	Mathematics – II	CO1:Calculate a root of algebraic and transcendental equations.
				CO2:Explain relation between the finite difference operators. Compute interpolating polynomial for the given data.
				CO3:Solve ordinary differential equations numerically using Euler's and RK method
				CO4:Find Fourier series for certain functions
				CO5:Identify/classify and solve the different types of partial differential equations
				CO6:Find Fourier Transforms for certain functions
I-II		BS1203	Mathematics – III	CO1:Find rank and Solve simultaneous linear equations numerically using various matrix methods
				CO2:Determine Eigen values and Eigen vectors of a given matrix.
				CO3:Determine double integral over a region and triple integral over a volume.
				CO4:Evaluation of Improper Integrals by using special functions.
				CO5:Calculate gradient of a scalar function, divergence and curl of a vector function.
				CO6:Determine line, surface and volume integrals. Apply Green, Stokes and Gauss divergence theorems to calculate line, surface and volume integrals
				CO1: Impart the knowledge of the concept of coherence and superposition and apply the knowledge to understand

I-II		BS1204	Applied Physics	the utility of interference in our daily life.
				CO2: Analyse the intensity variation of light due to diffraction and apply the knowledge to understand the working of optical instrumentation with high resolution.
				CO3: Impart the knowledge of the physical optics phenomena like polarisation. Analyse the concept of population inversion and different types of emission. Comprehend the role of LASERS in the scenario of human development.
				CO4: Study the theoretical concepts underlying the EM fields and comprehend its role in the advancement of science and technology.
				CO5:Conceive the concepts related to quantum mechanics and apply the knowledge to different problems. Provide a clear understanding about the different electron theories and their defects.
				CO6: Discern the classification of crystalline solids and comprehend the relevance of Einstein's equations in the drift and diffusion mechanisms in the conduction of semiconductors, Hall effect and its applications.
I-II		ES1201	Programming for Problem Solving using C	CO1: To write algorithms and to draw flowcharts for solving problems
				CO2: To convert flowcharts/algorithms to C Programs, compile and debug programs. To use different operators, data types and write programs that use two-way/ multi-way selection · To select the best loop construct for a given problem

				CO3: To design and implement programs to analyze the different pointer applications · To decompose a problem into functions and to develop modular reusable code · To apply File I/O operations
I-II		ES1213	Digital Logic Design	CO1: An ability to define different number systems, binary addition and subtraction, 2's complement representation and operations with this representation.
				CO2: An ability to understand the different switching algebra theorems and apply them for logic functions.
				CO3: An ability to define the Karnaugh map for a few variables and perform an algorithmic reduction of logic functions.
				CO4: Students will be able to design various logic gates starting from simple ordinary gates to complex programmable logic devices & arrays.
				CO5: Students will be able to design various sequential circuits starting from flip-flop to registers and counters.
II-I	R1621051	C201	Statistics With R Programming	CO1:List motivation for learning a programming language
				CO2:Access online resources for R and import new function packages into the R workspace
				CO3:Import, review, manipulate and summarize data-sets in R
				CO4:Explore data-sets to create testable hypotheses and identify appropriate statistical tests
				CO5:Perform appropriate statistical tests using R Create and edit visualizations with
				CO6:Use R in their own research
II-I	R1621052	C202	Mathematical Foundation Of Computer Science	CO1:Comprehend mathematical Principles and logic
				CO2:Communicate effectively mathematical ideas/results verbally/in writing

				CO3:Apply the Knowledge of Number Theory in the areas of such cryptography
				CO4:Demonstrate knowledge of mathematical modelling and proficiency in using mathematical software
				CO5:Demonstrate skills in solving mathematical problems
				CO6:Manipulate and analyze data numerically and graphically using appropriate software
II-I	R1621053	C203	Digital Logic Design	CO1:An ability to define different number systems, binary addition and subtraction, 2's complement representation and operations with this representation.
				CO2:An ability to understand the different switching algebra theorems and apply them for logic functions.
				CO3:An ability to define the Karnaugh map for a few variables and perform an algorithmic reduction of logic functions
				CO4:An ability to define the other minimization methods for any number of variables Variable Entered Mapping (VEM)
				CO5:Quine-MeCluskey (QM) Techniques and perform an algorithmic reduction of logic functions
				CO6:To learn simple digital circuits in preparation for computer engineering
II-I	R1621054	C204	Python Programming	CO1:Introduction to Scripting Language
				CO2:Making Software easily right out of the box
				CO3:Experience with an interpreted Language.
				CO4:To build software for real needs
				CO5:Prior Introduction to testing software
				CO6:Operating System Interface
				CO1:Distinguish between procedures and

II-I	R1621055	C205	Data Structures Through C++	CO2:object oriented programming
				CO3:Apply advanced data structure strategies for exploring complex data structures.
				CO4:Compare and contrast various data structures and design techniques in the area of Performance.
				CO5:Implement data structure algorithms through C++. • Incorporate data structures into the applications such as binary search trees
				CO6:AVL and B Trees
				CO7:Implement all data structures like stacks, queues, trees, lists and graphs and compare their Performance and trade off
II-I	R1621056	C206	Computer Graphics	CO1:Know and be able to describe the general software architecture of programs that use 3D computer graphics.
				CO2:Know and be able to discuss hardware system architecture for computer graphics. This Includes, but is not limited to: graphics pipeline, frame buffers, and graphic accelerators/co-processors.
				CO3:Know and be able to select among models for lighting/shading: Color, ambient light; distant and light with sources;
				CO4:Phong reflection mode
				CO5:shading (flat, smooth)
				CO6:Overview of Ray Tracing
II-II	R1622051	C209	Software Engineering	CO1:Define and develop a software project from requirement gathering to implementation
				CO2:Obtain knowledge about principles and practices of software Engineering
				CO3:Forcus on Fundamentals of Modeling a software Project
				CO3:`coding
				CO4:Define and develop a software project from requirement gathering to implementation
				CO5:Obtain knowledge about principles and practices of software Engineering
II-II	R1622052	C210	Java Programming	CO1:Understand Java programming concepts and utilize Java Graphical User

				Interface in Program writing.
				CO2:Write, compile, execute and troubleshoot Java programming for networking CO3:concepts.
				CO4:Build Java Application for distributed environment.
				CO5:Inheritance, types of inheritance
				CO6:Design and Develop multi-tier applications.
				CO7:Identify and Analyze Enterprise applications
II-II	R1622053	C211	Advanced Data Structures	CO1:Be able to understand and apply amortised analysis on data structures, including binary search trees, mergable heaps, and disjoint sets.
				CO2:Understand the implementation and complexity analysis of fundamental algorithms such as RSA, primarily testing, max flow, discrete Fourier transform
				CO3:Simple Implementation, Binary Heap-Structure Property-Heap-Order Property-Basic
				CO4:Binamial queue Structure ,Binomial Queue Operation
				CO5:Optimal Binary Search Trees, Red Black Trees
				CO6:Have an idea of applications of algorithms in variety of areas including linear programming and duality , string matching game theory.
II-II	R1622054	CO	Computer Organization	CO1:Students can understand the architecture of modern computer.
				CO2:They can analyze the Performance of a computer using performance equation
				CO3:Understanding of different instruction types.
				CO4:Students can calculate the effective address of an operand by addressing modes
				CO5:They can understand how computer stores positive and negative numbers.
				CO6:Understanding of how a computer performs arithmetic operation of positive and negative numbers.

II-II	R1622055	C213	Formal Languages and Automata Theory	CO1:Classify machines by their power to recognize languages,
				CO2:Employ finite state machines to solve problems in computing,
				CO3:Explain deterministic and non-deterministic machines,
				CO4:Pushdown Automata, Definition, Model
				CO5:Turing Machines-Instantaneous Descriptions, Transition Tables and Transition Diagrams
				CO6:Comprehend the hierarchy of problems arising in the computer science
II-II	R1622056	C214	Principles of Programming Languages	CO1:Describe syntax and semantics of programming languages
				CO2:Explain data, data types, and basic statements of programming languages
				CO3:Design and implement subprogram constructs, Apply object - oriented, concurrency, and event handling programming constructs
				CO4:Develop programs in Scheme, ML, and Prolog
				CO5:Object – orientation, design issues
				CO6:OOP languages, implementation of object, oriented constructs, concurrency
III-I	R1631051	C301	Compiler Design	CO1:Acquire knowledge in different phases and passes of Compiler, and specifying different types of tokens by lexical analyzer
				CO2:also able to use the Compiler tools like LEX, YACC, etc
				CO3:Parser and its types i.e. Top-down and Bottom-up parsers.
				CO4:Construction of LL, SLR, CLR and LALR parse table.
				CO5:Syntax directed translation, synthesized and inherited attributes.
				CO6:Techniques for code optimization.
III-I	R1631052	C302	Unix Programming	CO1:Documentation will demonstrate good organization and readability.
				CO2:File processing projects will require data organization, problem solving and research.
				CO3:Scripts and programs will demonstrate simple effective user

				interfaces. 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:Testing will demonstrate both black and glass box testing strategies
				CO6:Project work will involve group participation.
III-I	R1631053	C303	Object Oriented Analysis and Design using UML	CO1:Ability to find solutions to the complex CO2:problems using object oriented approach
				CO3:Represent classes
				CO4:responsibilities and states using UML notation
				CO5:Identify classes
				CO6:responsibilities of the problem domain
				CO7:Study the notations of Unified Modelling Language
III-I	R1631054	C304	Database Management Systems	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
III-I	R1631055	C305	Operating Systems	CO1:Design various Scheduling algorithms.
				CO2:Apply the principles of concurrency.
				CO3:Design deadlock, prevention and avoidance algorithms.
				CO4:Compare and contrast various memory management schemes. Design and Implement a prototype file systems.
				CO5:Perform administrative tasks on

				Linux Servers
				CO6:Introduction to Android Operating System Internals
III-II	R1632051	C309	Computer networks	CO1:Understand OSI and TCP/IP models
				CO2:Analyze MAC layer protocols and LAN technologies
				CO3:Design applications using internet protocols
				CO4:Understand routing and congestion control algorithms
				CO5:Understand how internet works
				CO6:Scheduling Algorithms
III-II	R1632052	C310	Data Ware Housing And Data Mining	CO1:Understand stages in building a Data Warehouse
				CO2:Understand the need and importance of CO3:Pre-processing techniques
				CO4:Understand the need and importance of Similarity and dissimilarity techniques
				CO5:Analyze and evaluate performance of algorithms for Association Rule
				CO6:Analyze Classification and Clustering algorithms
				CO7:Analyze DBSCAN
III-II	R1632053	C311	Design And Analysis Of Algorithms	CO1:Argue the correctness of algorithms using inductive proofs and invariants.
				CO2:Analyze worst-case running times of algorithms using asymptotic analysis.
				CO3:Describe the divide-and-conquer paradigm and explain when an algorithmic design situation calls for it. Recite algorithms that employ this paradigm. Synthesize divide-and conquer algorithms
				CO4:Derive and solve recurrences describing the performance of divide and-conquer algorithms.
				CO5:Describe the dynamic-programming paradigm and explain when an algorithmic design situation calls for it. Recite algorithms that employ this paradigm. Synthesize dynamic programming algorithms, and analyze them.
				CO6:Describe the greedy paradigm and explain when an algorithmic design situation calls for it. Recite algorithms that

				employ this paradigm. Synthesize greedy algorithms, and analyze them.
III-II	R1632054	C312	Software Testing Methodologies	CO1:Understand the basic testing procedures.
				CO2:Able to support in generating test cases and test suites.
				CO3:Able to test the applications manually by applying different testing method
				CO4:Able to test the applications manually by applying different automation tools
				CO5:Apply tools to resolve the problems in Real time environment.
				CO6:Apply various Software Testing Tools
III-II	R1632049		IPR & Patents	CO1:IPR Laws and patents pave the way for innovative ideas which are instrumental for inventions to seek Patents
				CO2:Student get an insight on Copyrights, Patents and Software patents which are instrumental for further advancements.
				CO3:Various cyber law and Cyber crime
				CO4:Various types of Trademarks
				CO5:Various types of patents
				CO6:Information Technology Act 2000
IV-I	R1640151	C401	Cryptography And Network Security	CO1:Be able to individually about software security problems
				CO2:Protection techniques on both an abstract and a more technically advanced level
				CO3:Be able to individually explain how software exploitation Techniques, used by adversaries function and how to protect them
				CO4:various cryptography algorithms
				CO5:Asymmetric Key Cryptography
				CO6:Digital Signatures
IV-I	R1640151	C402	UML & Design Patterns	CO1:Identify the purpose and methods of use of common object-oriented design patterns
				CO2:select and apply these patterns in their own designs
				CO3:represent the data dependencies of a simple program using UML
				CO4:represent user and programmatic

				interactions using UML
				CO5:produce and represent documents for purpose of capturing software requirements and specifications
				CO6:produce plans to limits risks specific to software designed for use in a particular context
IV-I			Mobile Computing	CO1:able to think and develop new mobile application
				CO2:able to take new technical issue related to new this paradigm and find solutions to them
				CO3:able to develop new adhoc applications
				CO4:able to understand and develop any existing or new protocol related to mobile environment
				CO5:data synchronization
				CO6:MANETS
IV-I	R164105A	C407	Big Data Analytics	CO1:Summarize data structures and generics in java
				CO2:Outline the building blocks of Hadoop and summarize different modes of Hadoop Installation
				CO3:Experiment by writing basic map reduce programs
				CO4:Make use of hadoop input output and writable interface for building map reduce applications
				CO5:Demonstrate PIG architecture and develop PIG scripts
				CO6:Apply HIV E to structure and Data and to develop HIVE queries
IV-I			Cloud Computing	CO1:Make use of system models for distributed and cloud competing HPC and HTC can be obtained
				CO2:Extend the virtualization concept to chips ,CPUS, networks and data centres
				CO3:Apply the offered services servicing models cloud platforms and bring out efficient SOA
				CO4:Identify the features of distributed systems GRID platforms and survey the services offered by Google app AWS and MS Azure
				CO5:Analyze cloud resource management

				querying methodologies and scheduling of map reduce applications
				CO6:Illustrate the different file systems like Google file system, apache, hadoop and Amazon S3
IV-II	R1642051	C409	Distributed Systems	CO1:Develop a familiarity with distributed file systems
				CO2:Describe important characteristics of distributed systems
				CO3:Salient architectural features of such systems.
				CO4:Describe the features and applications of important standard protocols which are used in distributed systems
				CO5:Gaining practical experience of inter-process communication in a distributed environment
				CO6:Inter Process Communication
IV-II	R1642052		Management Science	CO1:After completion of the Course the student will acquire the knowledge on management functions
				CO2:global leadership and organizational CO3:behaviour
				CO4:Will familiarize with the concepts of functional management
				CO5:project management
				CO6:strategic management
				CO7:Supply chain Management
IV-II	R1642053		Machine Learning	CO1:Recognize the characteristics of machine learning that make it useful to real-world
				CO2:Characterize machine learning algorithms as supervised, semi-supervised, and Unsupervised.
				CO3:Have heard of a few machine learning toolboxes
				CO4:Be able to use support vector machines.
				CO5:Be able to use regularized regression algorithms
				CO6:Understand the concept behind neural networks for learning non-linear functions.
			Internet of Things	CO1:Outline IOT technology sources of IOT and Design principles

				CO2:Summarize the business models in the IOT,IOT layers and design standardization, communication technologies and of designing
				CO3:Infer the design principles fr web connectivity for connected devices
				CO4:Out line connectivity principles and application layer protocols
				CO5:Summarize data acquiring organizing and analytics in IOT and explain business process integration
				CO6:Make use of Data Collection storage and computing using cloud platform and identify everything as a service and cloud service models