



VIJAYA INSTITUTE OF TECHNOLOGY FOR WOMEN

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

Phone: 0866-2844444, Email: vijayatechfw@gmail.com Website: www.vitw.edu.in

College Code: NP, Enikepadu, Vijayawada-521108

Department of Artificial Intelligence and Machine Learning

List of Course Outcomes

Batch: 2020(R20)

Year & Sem	Subject Code	Course Code	Course Name	At The End of The Course, The Student Will Be Able To
I-I	R201102	HS1101	Communicative English	CO1: understand social or transactional dialogues spoken by native speakers of English and identify the context, topic, and pieces of specific information.
				CO2: ask and answer general questions on familiar topics and introduce oneself/others.
				CO3: employ suitable strategies for skimming and scanning to get the general idea of a text and locate specific information.
				CO4: recognize paragraph structure and be able to match beginnings/endings/headings with paragraphs.
				CO5: form sentences using proper grammatical structures and correct word forms.
				CO6: Apply safety Editing short texts – identifying and correcting common errors in grammar.
I-I	R201101	BS1101	Mathematics –1	CO1: Utilize mean value theorems to real life problems.
				CO2: Solve the differential equations related to various engineering fields.
				CO3: Familiarize with functions of several variables which is useful in optimization.
				CO4: Apply double integration techniques in evaluating areas bounded by region.
				CO5: Students will also learn important tools of calculus in higher dimensions.
				CO6: Students will become familiar with 2-dimensional and 3-dimensional coordinate System.
I-I	R201115	BS1102	Applied chemistry	CO1: Design models for energy by different natural sources.
				CO2: Utilize the theory of construction of electrodes, batteries and fuel cells in redesigning new engineering products and categorize the reasons for corrosion and study methods to control corrosion.
				CO3: Synthesize nano materials for modern advances of engineering technology. Summarize the preparation of semiconductors



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				analyze the applications of liquid crystals and superconductors.
				CO4: Analyze the principles of different analytical instruments and their applications.
				CO5: Obtain the knowledge of computational chemistry and molecular machines.
				CO6: Design models for energy by different natural sources.
I-I	R201110	ES1101	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.
				CO3: To use different operators, data types and write programs that use two-way/ multi-way selection.
				CO4: Synthesize nano materials for modern advances of engineering technology. Summarize the preparation of semiconductors analyze the applications of liquid crystals and superconductors.
				CO5: To design and implement programs to analyze the different pointer applications.
				CO6: To decompose a problem into functions and to develop modular reusable code.
I-I	R201118	ES1102	COMPUTER ENGINEERING WORKSHOP	CO1: Assemble and disassemble components of a PC.
				CO2: Construct a fully functional virtual machine.
				CO3: Summarize various Linux operating system commands.
				CO4: Recognize characters.
				CO5: Create audio files and podcasts
				CO6: Extract text from scanned images.
I-II	R201201	BS1201	Mathematics-II	CO1: Develop the use of matrix algebra techniques that is needed by engineers for practical applications.
				CO2: Solve system of linear algebraic equations using gauss Elimination.
				CO3: Solve system of linear algebraic equations using Gauss Jordan, Gauss seidel.
				CO4: Evaluate the approximate roots of polynomial and transcendental equations by different algorithms.
				CO5: Apply Numerical integral Techniques to different engineering problems.



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				CO6: Apply different algorithms for approximating the solution of Ordinary differential Equations with initial conditions to its analytical computations.
I-II	R201207	BS1202	Applied Physics	CO1: Determine the elastic modulus of given material and Moments of inertia of various types of pendulums.
				CO2: Operate optical instruments (Spectrometer and travelling microscope) to understand principles of interference and diffraction of light.
				CO3: Understand the modes of mechanical vibrations and determine their frequency.
				CO4: Apply tangent law to study the variation of magnetic fields due to current carrying conductors.
				CO5: Estimate the Energy band gap, thermal coefficients of resistance for semiconductors and understand the volt-ampere characteristics of diodes.
				CO6: Gain knowledge Susceptibility and Dielectric constant-types of polarizations: Electronic and Ionic (Quantitative)
I-II	R201221	ES1201	Digital Logic Design	CO1: Outline the working principles of Resistance parameter – series and parallel combination, Inductance parameter – series and parallel combination
				CO2: Make use of the principles of R-L circuit, R-C circuit with DC excitation, Evaluating initial conditions procedure, second order differential
				CO3: Classify and Illustrate the construction and working of various measuring instruments.
				CO4: Classify series R-L, R-C, R-L-C circuits problem solving. Complex impedance and phasor notation for R-L, R-C, R-L-CL-C
				CO5: Understand the fundamentals of Z-parameters, Y-parameters, Transmission line parameters, h-parameters, Inverse h-parameters
				CO6: Analyze the different networks, problem solving including dependent sources also.
				CO1: Develop essential programming skills in computer programming
				CO2: Apply the basics of programming in the Python language



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I-II	R201225	ES1202	Python Programming	CO3:solve coding tasks related conditional execution, loops
				CO4:Solve coding tasks related to the fundamental notions
				CO5: techniques used in object oriented programming
				CO6: concepts like data types, containers
I-II	R201218	CS1201	Data Structures	CO1:What is the Principle of operation of DC generator – emf equation
				CO2:Explain the operation of DC generator and analyze the characteristics of DC generator
				CO3:Build the Construction of three phase synchronous motor - operating principle – equivalent circuit of synchronous motor.
				CO4: Explain the principle of operation of DC motor and analyze their characteristics. Acquire the skills to analyze the starting and speed control methods of DC motors.
II-I	R2021011	BS2101	Mathematics -III	CO1:Interpret the physical meaning of different operators such as gradient, curl and divergence
				CO2: Estimate the work done against a field, circulation and flux using vector calculus.
				CO3: Apply the Laplace transform for solving differential equations.
				CO4: Compute the Fourier series of periodic signals.
II-I	R2021054	CS2102	Mathematical Foundations of Computer Science	CO5: Apply integral expressions for the forwards and inverse Fourier transform to a range of non-periodic waveforms.
				CO6: Identify solution methods for partial differential equations that model physical processes.
				CO1:Demonstrate skills in solving mathematical problems
				CO2:Comprehend mathematical principles and logic
				CO3:Demonstrate knowledge of mathematical modelling.
				CO4:proficiency in using mathematical



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				software
				CO5:Manipulate and analyze data numerically and/or graphically using appropriate Software
				CO6:Communicate effectively mathematical ideas/results verbally or in writing
II-I	R2021421	CS2103	Introduction to Artificial Intelligence and Machine Learning	CO1:Enumerate the history and foundations of Artificial Intelligence
				CO2:Apply the basic principles of AI in problem solving
				CO3:Choose the appropriate representation of Knowledge
				CO4:Enumerate the Perspectives and Issues in Machine Learning
				CO5:Identify issues in Decision Tree Learning
				CO6:Analyze the Ensemble Learning Methods
II-I	R2021422	CS2104	Object Oriented Programming with Java	CO1:Able to realize the concept of Object Oriented Programming & Java Programming Constructs
				CO2:Able to describe the basic concepts of Java such as operators, classes, objects
				CO3:Able to describe the inheritance, packages, Enumeration and various keywords
				CO4:Apply the concept of exception handling and Input/ Output operations
				CO5:Able to design the applications of Java & Java applet
				CO6:Able to Analyze & Design the concept of Event Handling and Abstract Window Toolkit.
II-I	R2021121	CS2105	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:Outline the role and issues in management of data such as efficiency, privacy, security
				CO6:Role and issues inethical responsibility, and strategic advantage.
				CO1:Classify the concepts of data science and its importance



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II-II	R2022051	BS2201	Probability and Statistics	CO2: Interpret the association of characteristics and through correlation and regression tools
				CO3: Make use of the concepts of probability and their applications
				CO4: Apply discrete and continuous probability distributions
				CO5: Design the components of a classical hypothesis test
				CO6: Infer the statistical inferential methods based on small and large sampling tests
II-II	R2022421	CS2202	Computer Organization	CO1: Develop a detailed understanding of computer systems
				CO2: Cite different number systems, binary addition, subtraction, standard, floating-point, and micro operations
				CO3: Develop a detailed understanding of architecture and functionality of central processing unit
				CO4: Exemplify in a better way the I/O and memory organization
				CO5: Illustrate concepts of parallel processing, pipelining
II-II	R2022422	CS2203	Data Warehousing and Mining	CO1: Summarize the architecture of data warehouse
				CO2: Apply different preprocessing methods, Similarity
				CO3: Dissimilarity measures for any given raw data.
				CO4: Construct a decision tree and resolve the problem of model overfitting
				CO5: Compare Apriori and FP-growth association rule mining algorithms for frequent itemset generation
				CO6: Apply suitable clustering algorithm for the given data set
II-II	R2022053	ES2204	Formal Languages and Automata Theory	CO1: Classify machines by their power to recognize languages.
				CO2: Summarize language classes & grammars relationship among them with the help of Chomsky hierarchy
				CO3: Design PDA as acceptor and TM as Calculators
				CO4: Employ finite state machines to solve



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				problems in computing
				CO5: Illustrate deterministic and non-deterministic machines
				CO6: Quote the hierarchy of problems arising in the computer science
II-II	R2022055	HS2205	Managerial Economics and Financial Accountancy	CO1: The Learner is equipped with the knowledge of estimating the Demand and demand elasticities for a product
				CO2: The knowledge of understanding of the Input-Output-Cost relationships and estimation of the least cost combination of inputs
				CO3: The pupil is also ready to understand the nature of different markets and Price Output determination
				CO4: under various market conditions and also to have the knowledge of different Business Units
				CO5: The Learner is able to prepare Financial Statements and the usage of various Accounting tools for Analysis
				CO6: The Learner can able to evaluate various investment project proposals with the help of capital budgeting techniques for decision making
III-I	R2031421	PC3101	Compiler Design	CO1: Demonstrate phases in the design of compiler
				CO2: Organize Syntax Analysis, Top Down and LL(1) grammars
				CO3: Design Bottom Up Parsing and Construction of LR parsers
				CO4: Exemplify in a better way the I/O and memory organization
				CO5: Determine algorithms to generate code for a target machine
				CO6: Analyze synthesized, inherited attributes and syntax directed translation schemes
III-I	R2031422	PC3102	Operating Systems	CO1: Describe various generations of Operating System and functions of Operating System
				CO2: Describe the concept of program, process and thread and analyze various CPU Scheduling
				CO3: Algorithms and compare their performance Solve Inter Process Communication problems using Mathematical Equations by various methods



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				CO4: Compare various Memory Management Schemes especially paging and Segmentation.
				CO5: System and apply various Page Replacement Techniques Outline
				CO6: File Systems in Operating System like UNIX/Linux and Windows
III-I	R2031423	PC3103	Machine Learning	CO1: Explain the fundamental usage of the concept Machine Learning system
				CO2: Demonstrate on various regression Technique
				CO3: Analyze the Ensemble Learning Methods
				CO4: Illustrate the Clustering Techniques.
				CO5: Dimensionality Reduction Models in Machine Learning.
				CO6: Discuss the Neural Network Models and Fundamentals concepts of Deep Learning.
III-I	R203142I	PE3104	Principles of Communication	CO1: Understand basics of Data Visualization
				CO2: Implement visualization of distributions
				CO3: Write programs on visualization of time series
				CO4: Explain the fundamental usage of proportions & associations
				CO5: Apply visualization on Trends and uncertainty
				CO6: Explain principles of proportions
III-I	R2031057	PE3105	CICD using DEVOPS	CO1: Enumerate the principles of continuous development and deployment, automation.
				CO2: Cloud management, inter-team collaboration, and IT service agility.
				CO3: Describe DevOps & DevSecOps methodologies and their key concepts
				CO4: Illustrate the types of version control systems, continuous integration tools, continuous monitoring tools, and cloud models
				CO5: Set up complete private infrastructure using version control systems and CI/CD tools
				CO6: Acquire the knowledge of maturity model, Maturity Assessment
				CO1: Demonstrate different network models for networking links OSI, TCP/IP, B-ISDN, N-BISDN and get knowledge about various communication techniques, methods and protocol standards.
				CO2: Discuss different transmission media and different switching networks.



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III-II	R2032424	PC3201	Computer Networks	CO3: Analyze data link layer services, functions and protocols like HDLC and PPP.
				CO4: Compare and Classify medium access control protocols like ALOHA, CSMA, CSMA/CD, CSMA/CA, Polling, Token passing, FDMA, TDMA, CDMA protocols
				CO5: Determine application layer services and client server protocols
				CO6: Analyze client server paradigms like WWW, HTTP, FTP, e-mail and SNMP etc.
III-II	R2032426	PC3202	Deep Learning	CO1: Demonstrate the fundamental concepts learning techniques
				CO2: Classify the Concepts Artificial Intelligence, Machine Learning and Deep Learning.
				CO3: Discuss the Neural Network training, various random models.
				CO4: Explain the Techniques of Keras, TensorFlow, Theano and CNTK
III-II	R2032423	PC3203	Design and Analysis of Algorithms	CO5: Classify the Concepts of CNN and RNN
				CO6: Implement Interactive Applications of Deep Learning.
				CO1: Analyze the performance of a given algorithm, denote its time complexity
				CO2: List and describe various algorithmic approaches and Solve problems using divide and conquer & greedy Method
III-II	R203242B	PE3204	Distibuted Systems	CO3: Synthesize efficient algorithms dynamic programming approaches to solve in common engineering design situations.
				CO4: Organize important algorithmic design paradigms and methods of analysis
				CO5: Demonstrate NP- Completeness theory ,lower bound theory and String Matching
				CO6: Demonstrate the Asymptotic notation for recursive and non-recursive algorithms
III-II	R203242B	PE3204	Distibuted Systems	CO1: Elucidate the foundations and issues of distributed systems
				CO2: Illustrate the various synchronization issues and globalstate for distributed systems
				CO3: Describe the features of real time systems
				CO4: Illustrate the Mutual Exclusion and Deadlock detection algorithms in distributed systems
				CO5: Describe the agreement protocols and



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				<p>fault tolerance mechanisms in distributed systems</p> <p>CO6: Describe the features of peer-to-peer and distributed shared memory systems</p>
III-II	R203204L	PE3205	Internet of Things	<p>CO1: Review Internet of Things (IoT).</p> <p>CO2: Demonstrate various business models relevant to IoT.</p> <p>CO3: Construct designs for web connectivity</p> <p>CO4: Organize sources of data acquisition related to IoT</p> <p>CO5: Demonstrate integrate to enterprise systems.</p> <p>CO6: Describe IoT with Cloud technologies.</p>
IV-I	R204142A	PE4101	Reinforcement Learning	<p>CO1: Understand basic concepts of Reinforcement learning</p> <p>CO2: Identifying appropriate learning tasks for Reinforcement learning techniques</p> <p>CO3: Understand various methods and applications of reinforcement learning</p> <p>CO4: Implement deep neural networks to solve real world problems</p> <p>CO5: Choose appropriate pre-trained model to solve real time problem</p> <p>CO6: Interpret the results of two different deep learning models</p>
IV-I	R204142O	PE4102	Cloud Computing	<p>CO1: Illustrate the key dimensions of the challenge of Cloud Computing</p> <p>CO2: Classify the Levels of Virtualization and mechanism of tools.</p> <p>CO3: Analyze Cloud infrastructure including Google Cloud and Amazon Cloud.</p> <p>CO4: Create Combinatorial Auctions for cloud resource.</p> <p>CO5: design scheduling algorithms for computing cloud</p> <p>CO6: Assess control storage systems and cloud security, the risks involved its impact and develop cloud application</p>
				<p>CO1: Analyze the nature of complex system and its solutions.</p> <p>CO2: Illustrate & relate the conceptual model of the UML, identify & design the classes and relationships</p> <p>CO3: Analyze & Design Class and Object Diagrams that represent Static Aspects of a Software System</p>



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IV-I	R204142J	PE4103	Object Oriented Analysis and Design	CO4:Advanced Structural Modeling Concepts for designing real time applications
				CO5:Analyze & Design behavioral aspects of a Software System using Use Case, Interaction and Activity Diagrams.
				CO6:Analyze & Apply techniques of State Chart Diagrams and Implementation Diagrams to model behavioral aspects and Runtime environment of Software Systems.
IV-I	R2041011	HS4104	Universal Human Values	CO1:Visualizing a universal harmonious order in society- Undivided Society, Universal Order- from family to world family
				CO2: Analyze & Design the meaning of Trust; Difference between intention and competence
				CO3: Analyze & Design Difference between respect and differentiation
				CO4: Resolution, Prosperity, fearlessness (trust) and co-existence as comprehensive Human Goals
				CO5: Harmonious order in society- Undivided Society
				CO6: Universal Order- from family to world family.
IV-I	R204101R	HS4105	Environmental Science	CO1:Relate the concept of Engineering drawing being the principal method of communication for engineers,
				CO2: Apply make the students draw the projections of the lines inclined to both the planes.
				CO3: Develop regular planes perpendicular/parallel to one reference plane and inclined to the other reference plane; inclined to both the reference planes.
				CO4: Perform Experiments with Projections of Solids – Prisms, Pyramids, Cones and Cylinders with the axis inclined to both the planes.
				CO5: Estimate the student will be able to represent and convert the isometric view to orthographic view and vice versa.
				CO6:Make use of Conversion of isometric views to orthographic views
IV-II	R2041	P4201	Project	Engineering is the practice of using natural science and the engineering design process to solve technical problems, increase efficiency and productivity, and improve systems.