Lokmanya Tilak Jankalyan Shikshan Sanstha's
PRIYADARSHINI BHAGWATI COLLEGE OF ENGINEERING
Harpur Nagar, Umred Road (Near Bada Tajbagh), Nagpur-24
(Approved by AICTE, New Delhi, Govt. of Maharashtra
and affiliated to Rashtrasant Tukdoji Maharaj Nagpur University)
Email: principalpbcoe@gmail.com, Website: www.pbcoe.edu.in
NAAC Accredited

Department of Computer Science & Engineering

Course Outcomes

B. Tech. Seventh Semester (CBCS)

Course Name: Cryptography and Network Security	
Code:BTECHCSE70IT	
At the end of the course student will be able to :	
CO1	Acquire knowledge about sceurity goals, background of cryptographic mathematics and identification of its application
CO2	Explain, analyze and implement - the symmetric key algorithm
CO3	Acquire knowledge about the background of mathematics of asymmetric key cryptography and Explain and analyze - asymmetric key encryption algorithms, digital signatures
CO4	Analyze the concept of message integrity and the algorithms for checking the integrity of data
CO5	Analyze and Explain the existing cryptosystem used in networking

Course Name:Cryptography and Network Security	
Code: BTECHCSE701P	
At the end of the course student will be able to :	
CO1	Acquire knowledge about security goals, background of cryptographic mathematics and identification of its application
CO2	Analyze and implement - the symmetric key algorithm
CO3	Acquire knowledge about the background of mathematics of asymmetric key cryptography and Explain and analyze asymmetric key encryption algorithms, digital signatures
CO4	Analyze the concept of message integrity and the algorithms for checking the integrity of data.
CO5	Analyze the existing cryptosystem used in networking

Course Name: Elective-IV Deep Learning	
Code: BTECHCSE702T	
At the end of the course student will be able to :	
CO1	Explain basic of deep learning algorithms. a EE iil
CO2	Describe feedforward Neural Network
CO3	Evaluate the performance of different deep learning 'models with respect to the optimization, bias variance trade-off, overfitting and underfitting.
CO4	Apply the convolution networks in context with real world problem solving.
CO5	Apply recurrent neural networks in context with real world problem solving

Course Name:Elective IV : Optimization Technique	
Code: BTECHCSE702T	
At the end of the course student will be able to :	
CO1	Explain the theoretical workings of the graphical, simplex and analytical methods for making effective decision on variables so as to optimize the objective function,
CO2	Identify appropriate optimization method to solve complex problems involved in various industries.
CO3	Demonstrate the optimized material distribution schedule using transportation model to minimize total distribution cost.
CO4	Identify appropriate equipment replacement technique to be adopted to minimize maintenance cost by eliminating equipment break-down.
CO5	Apply the knowledge of game theory concepts to articulate real-world com petitive situations to identify strategic decisions to counter the consequences.

Course Name:Elective IV : Gaming Architecture	
Code: BTECHCSE702T	
At the end of the course student will be able to :	
CO1	Discuss the concepts of Game Design and Developement
CO2	Design the processes, and use mechanics for game development.
CO3	Explain the Core architectures of Game Programming.
CO4	Use Game Programming platforms, frame works and engines.
CO5	Create interactive Games.

Course Name:Elective IV : Salesforce Technology	
Code: BTECHCSE702T	
At the end of the course student will be able to :	
CO1	Develop skills in configuring and managing Salesforce orgs.
CO2	Implement automation, security and debugging data
CO3	Explain Profiles , Roles and Salesforce Data Management
CO4	Build programming skills in Apex, Salesforce's programming language.
CO5	Extend and customize Salesforce to meet specific business requirements.

Course Name: Elective V - Natural Language Processing	
Code:BTECHCSE703T	
At the end of the course student will be able to :	
CO1	Explain the basic concepts and applications of Natural Language Processing (NLP)
CO2	Identify the challenges in NLP and evaluate the solutions to these challenges
CO3	Analyze and preprocess text data for NLP tasks
CO4	Apply different NLP techniques and algorithms such as text classification, information retrieval and extraction, syntactic and semantic analysis and deep learning models
CO5	Evaluate and compare different NLP techniques and algorithms using approprate metrics

Course Name:Elective V : Big Data Analytics	
Code: BTECHCSE703T	
At the end of the course student will be able to :	
CO1	Explain Concept, characteristics, types of big data
CO2	Build and maintain reliable, scalable, distributed systems with Apache Hadoop.
CO3	Apply Hadoop ecosystem components to solve real world problems.
CO4	Apply machine learning algorithm for big data analysis.
CO5	Implement Big Data Activities using Hive

Course Name:Elective V : Mobile Computing	
Code: BTECHCSE703T	
At the end of the course student will be able to :	
CO1	Explain the basic concepts of Wireless Communication with Cellular system.
CO2	Illustrate GSM System with Cell layout, Radio, Network Switching and Operation subsystem, HLR & VLR.
CO3	Explain Wireless LAN with its Architecture and MAC Layer.
CO4	Explain Mobile IP, Dynamic Host Configuration Protocol, Mobile Ad hoc Networks
CO5	Describe TCP over Wireless Networks with Wireless Application protocol.

Course Name:Open ElectiveII: Python Programming	
Code: BTECHCSE704T	
At the end of the course student will be able to :	
CO1	Develop programming skills in Python Progrimming language.
CO2	Implement object-oriented programming concepts using Python.
CO3	Use Python libraries for data analysis and visualization.
CO4	Develop web applications using Flask framework.
CO5	Apply machine learning concepts using Scikit-Learn.

Course Name:Open Elective II :JAVA Programming	
Code: BTECHCSE704T	
At the end of the course student will be able to :	
CO1	Explain the fundamentals of Java programming language and its application in software development.
CO2	Implement Java programming constructs such as variables, operators, control statements, loops, and arrays.
CO3	Design and implement object-oriented programs using inheritance, polymorphism, encapsulation, and abstraction concepts in Java.
CO4	Create and use classes, objects, and methods in Java programs.
CO5	Handle exceptions and use input/output techniques in Java programs.

Course Name:Open Elective II : Basics of Database Management System	
Code: BTECHCSE704T	
At the end of the course student will be able to :	
CO1	Explain the basics of DBMS to analyze an information problem in the form of an Entity relation diagram and design an appropriate data model for it.
CO2	Demonstrate basics of File organizations and its types
CO3	Interpret functional dependencies and various normalization forms
CO4	Perform basic transaction processing and management
CO5	Demonstrate SQL queries to perform CRUD (Create, Retrieve, Update, Delete) operations on database.

B. Tech. Eighth Semester (CBCS)

Course Name:Social Networks	
Code: BTECHCSE802T	
At the end of the course student will be able to :	
CO1	Describe social networks , its types and representation
CO2	Explain weak ties, strong and weak relationships , homophily and calculate
CO3	Analyse links
CO4	Explain Power Laws and Rich-Get-Richer Phenomena
CO5	Explain Small World Phenomenon

Course Name:Reinforcement Learning	
Code: BTECHCSE802T	
At the end of the course student will be able to :	
CO1	Explain Bandit algorithm and its mathematical formulation.
CO2	Use dynamic programming for reinforcement learning
CO3	Perform function approximation and apply LSM
CO4	Fit Q, DQN & Policy Gradient for Full RL
CO5	Use combinatorial models for complex problems

Course Name:GPU Architecture and Programming	
Code: BTECHCSE802T	
At the end of the course student will be able to :	
CO1	Explain conventional CPU architectures, their extensions for single instructionmultiple data processing (SIMD)
CO2	Develop a program in CUDA about data space & synchronization
CO3	Apply optimization on kernals, threads etc
CO4	Describe basics of OpenCL
CO5	Design an application using neural networks

Course Name:Block Chain and its Applications	
Code: BTECHCSE803T	
At the end of the course student will be able to :	
CO1	Explain basic crypto premitives
CO2	Explain elements and evolution of blockchain
CO3	Explain consensus in permissionless and permissioned models
CO4	Implement ethereum smart contracts and hyperledgers
CO5	Develop decentralized identity management, interoperability.

Course Name:Computer Vision	
Code: BTECHCSE803T	
At the end of the course student will be able to :	
CO1	Explain 2-D Projective Geometry, homography
CO2	Explain camera and stereo geometry
CO3	Illustrate Detect and match features
CO4	Process color and range in images
CO5	Apply clustering, classification and deep learning models

Course Name:Predictive Analytics - Regression and Classification	
Code: BTECHCSE803T	
At the end of the course student will be able to :	
CO1	Explain predictive models, LSM, Normal equations and GMT
CO2	Explain regression models and infer its statistical inference
CO3	Check model assumptions and bias variance tradeoff.
CO4	Developregression analysis in various programming languages
CO5	Apply regression models and classification for predictive analysis