SEMESTER – I

Course :PYTHON PROGRAMMING **Credit: 5**

Course Outcomes

CO1 Learn the basics of python, Do simple programs on python,

Learn how to use an array.

CO2 Develop program using selection statement, Work with Looping and jump statements, Do programs on Loops and jump statements.

CO3 Concept of function, function arguments, Implementing the concept strings in various application, Significance of Modules, Work with functions, Strings and modules.

CO4 Work with List, tuples and dictionary, Write program using list,

tuples and dictionary.

CO5 Usage of File handlings in python, Concept of reading and

writing files, Do programs using files.

COURSE :FUNDAMENTALS OF INFORMATIONTECHNOLOGY

Credit:2

Course Outcomes

CO1 Learn the basics of computer, Construct the structure of the required things in computer, learn how to use it.

CO2 Develop organizational structure using for the devices present currently under input or output unit.

CO3 Concept of storing data in computer using two header namely RAM and ROM with different types of ROM with advancement in storage basis.

CO4 Work with different software, Write program in the software and applications of software.

CO5 Usage of Operating system in information technology which really acts as a interpreter between software and hardware.

COURSE :PROBLEMSOLVING TECHNIQUES Credit 2

Course Outcomes

CO1 Study the basic knowledge of Computers. Analyze the programming languages.

CO2 Study the data types and arithmetic operations. Know about the algorithms.

Develop program using flow chart and pseudocode.

CO3 Determine the various operators. Explain about the structures.

Illustrate the concept of Loops

CO4 Study about Numeric data and character-based data. Analyze about Arrays.

CO5 Explain about DFD Illustrate program modules.

Creating and reading Files

SEMESTER–II

COURSE:DATA STRUCTURE AND ALGORITHM CREDIT: 5

Course Outcomes

CO1 To understand the asymptotic notations and analysis of time and space complexity

To understand the concepts of Linked List, Stack and Queue.

CO2 To understand the Concepts of Trees and Graphs Perform traversal operations on Trees and Graphs.To enable the applications of Trees and Graphs.

CO3 To apply searching and sorting techniques

CO4 To understand the concepts of Greedy Method To apply searching techniques.

CO5 Usage of File handlings in python, Concept of reading and writing files, Do programs using files.

COURSE:DATASTRUCTURE USING PYTHON LAB CREDIT:5

Course Outcomes

CO1 To understand the concepts of Linked List, Stack and Queue.

CO2 Concepts of Trees and Graphs. Perform traversal operations on Trees and Graphs.

To enable the applications of Trees and Graphs.

CO3 To apply searching and sorting techniques

CO4 To determine the concepts of Greedy Method To apply searching techniques.

CO5 Usage of File handlings in python, Concept of reading and writing files, Do programs usingfiles.

COURSE:INTRODUCTIONTOHTML **CREDIT:2**

Course Outcomes

CO 1 Knows the basic concept in HTML Concept of resources in HTML

CO 2 Knows Design concept. Concept of Meta Data

Understand the concept of save the files.

CO 3 Understand the page formatting. Concept of list

CO 4 Creating Links.

Know the concept of creating link to email address

CO 5 Concept of adding images Understand the table

creation.

COURSE:PHP PROGRAMMINGCREDIT:2

Course Outcomes

CO1: Analyze the behavior of basic quantum algorithms

CO2: Implementsimplequantumalgorithmsandinformationchannelsinthequantumcircuitmodel

CO3: Simulate a simple quantum error-correcting code

CO4: Prove basic facts about quantum information channels

SEMESTER–III

COURSE:FUNDAMENTALS OF DATA SCIENCE **CREDIT:5**

Course Outcomes

CO1 To explain the basic concepts of data science and its application

CO2 Apply principles of NumPy and Pandas to the analysis of data.

CO3 Make use of various file formats in loading and storage of data.

CO4 Identify and apply the need and importance of pre-processing techniques.

CO5 Show the results and present them in a pictorial format

COURSE:DATA SCIENCE LAB **CREDIT:5**

Course Outcomes

CO1 Usage of computer networks.Describe the functions of each layer in OSI and TCP/IP model.

CO2 Basics of Physical layer and apply them in real time applications. Techniques in multiplexing and switching.

CO3 Design of Data link layer.Deduction of errors and correction. Flow control using protocols

CO4 Design of Network layers.Generate IP address to find out the route through Routing algorithms

CO5 Design of transport layer.Protocols needed for End–End delivery ofpackets. Role of Application layer in real time applications

COURSE:E-COMMERCE **CREDIT:1**

Course Outcomes

CO1 Demonstrate E-Commerce Frameworks. Distinguish E-Commerce and media Convergence. Illustrate E-Commerce Applications.

CO2 Describe the E-Commerce Networks and Research Networks, Analyze the

Internet Commercialization

CO3 Evaluate the E-Commerce how incorporate the Internet, Construct the Web

Security

CO4 Distinguish the different payment system. Illustrate the data interchange

CO5 Understanding the Advertising and Marketing on the Internet, Describe Software Agent

COURSE:BIG DATA ANALYTICS **CREDIT:2**

Course Outcomes

CO1 Understand Big Data and its analytics in the real world

CO2 Design of Algorithms to solve Data Intensive Problems using Map Reduce Paradigm.

CO3 Analyze the Big Data framework like Hadoop and NOSQL to efficiently store and process Big Data to generate analytics.

CO4 Design and Implementation of Big Data Analytics using pig and spark to solve data intensive problems and to generate analytics.

CO5 Implement Big Data Activities using Hive.

SEMESTER–IV

COURSE:RELATIONAL DATABASEMANAGEMENT SYSTEM CREDIT:5

Course Outcomes

CO1 To demonstrate the characteristics of Database Management Systems. To study about the concepts and models of database.

To impart the concepts of System Development Life Cycle and E-R Model.

CO2 To classify the keys and the concepts of Relational Algebra. To impart the applications of various Normal Forms Classification of Dependency.

CO3 To elaborate the different types of Functions and Joins and their applications.

Introduction of Views, Sequence, Index and Procedure.

CO4 Representation of PL-SQL Structure.

To impart the knowledge of Sub Programs, Functions and Procedures.

CO5 Representation of Exception and Pre-Defined Exception.

To Point out the Importance of Triggers, Implicit and Explicit Cursors.

COURSE:RDBMS LAB USINGORACLE CREDIT:5

Course Outcomes

CO1 To demonstrate the characteristics of Database Management Systems. To study about the concepts and models of database.

To impart the concepts of System Development Life Cycle and E-R Model.

CO2 To classify the keys and the concepts of Relational Algebra. To impart the applications of various Normal Forms Classification of Dependency.

CO3 To elaborate the different types of Functions and Joins and their applications.

Introduction of Views, Sequence, Index and Procedure.

CO4 Representation of PL-SQL Structure.

To impart the knowledge of Sub Programs, Functions and Procedures.

CO5 Representation of Exception and Pre-Defined Exception.

To Point out the Importance of Triggers, Implicit and Explicit Cursors.

COURSE:NETWORK SECURITY **CREDIT:3**

Course Outcomes

CO1: Develop an understanding of the fundamentals of networking and security

CO2: Gain an appreciation for the complexities of protecting networks and systems from attack

CO3: Learn about the tools used to detect and protect against malicious attacks

CO4: Develop the skills to configure various security-related technologies

CO5: Utilize protocols such as TLS/SSL, IPSec, and SNMP in order to build secure systems

COURSE:DATA MINING AND WAREHOUSING **CREDIT:2**

Course Outcomes

CO1:To understand the basic concepts and the functionality of the various data mining and data warehousing component

CO2: To know the concepts of Data mining system architectures

CO3:Toanalyze the principles of association rules

CO4: To get analytical idea on Classification and prediction methods.

CO5: To Gain knowledge on Cluster analysis and its methods.

COURSE:OPEN SOURCE SOFTWARETECHNOLOGIES **CREDIT:2**

Course Outcomes

CO1. Acquire and understand the basic concepts in Java,application of OOPS concepts.

CO2.Acquire knowledge about operators and decision-making statements.

CO3.Identify the significance and application of Classes,arrays and interfaces and analyzing java arrays

CO4.Understand about the applications of OOPS concepts and analyze overriding and packages through javaprograms.

CO5.Create window-based programming using applet andgraphics programming.

SEMESTER–V

COURSE:MACHINE LEARNING **CREDIT:4**

Course Outcomes

CO1 Appreciate the importance of visualization in the data analytics solution

CO2 Apply structured thinking to unstructured problems

CO3 Understand a very broad collection of machine learning algorithms and problems

CO4 Learn algorithmic topics of machine learning and mathematically deep enough to introduce the required theory

CO5 Develop an appreciation for what is involved in learning from data.

COURSE:MACHINE LEARNING LAB **CREDIT:4**

Course Outcomes

CO1 Effectively use the various machine learning tools

CO2 Understand and implement the procedures for machine learning algorithms

CO3 Design Python programs for various machine learning algorithms

CO4 Apply appropriate datasets to the Machine Learning algorithms

CO5 Analyze the graphical outcomes of learning algorithms with specific datasets

COURSE:SOFTWARE ENGINEERING **CREDIT:4**

Course Outcomes

CO1: Gain basic knowledge of analysis and design of systems

CO2: Ability to apply software engineering principles and techniques

CO3 : Model a reliable and cost-effective software system

CO4: Ability to design an effective model of the system

CO5: Perform Testing at various levels and produce an efficient system.

COURSE:INFORMATIONSECURITY **CREDIT:3**

Course Outcomes

CO1: Understand network security threats, security services, and countermeasures

CO2: Understand vulnerability analysis of network security

CO3: Acquire background on hash functions; authentication; firewalls; intrusion detection techniques.

CO4: Gain hands-on experience with programming and simulation techniques for security protocols.

CO5: Apply methods for authentication, access control, intrusion detection and prevention.

COURSE:FINANCIAL ANALYTICS **CREDIT:3**

Course Outcomes

CO1 Interpret and discuss the outputs of given financial models and create their own models.

CO2 Design and create visualizations that clearly communicate financial data insights.

CO3 Gain essential knowledge and hands-on experience in the data analysisprocess, including data scraping, manipulation, and exploratory data analysis.

CO4 Be prepared for more advanced applied financial modeling courses.

CO5 Improve leadership, teamwork and critical thinking skills for financial decision making.

COURSE:CRYPTOGRAPHY **CREDIT:3**

Course Outcomes

CO1 Analyze the vulnerabilities in any computing system and hence be able to design a security solution.

CO2 Apply the different cryptographic operations of symmetric cryptographic algorithms

CO3 Apply the different cryptographic operations of public key cryptography

CO4 Apply the various Authentication schemes to simulate different applications.

CO5 Understand various Security practices and System security standards

COURSE:OPERATING SYSTEM **CREDIT:3**

Course Outcomes

CO1 Define OS with its view and goals and services rented by it
Deign of Operating System with its structure. Message through Inter process communication.
CO2 Describe the allocation of process through scheduling algorithms. Define critical section problems and its usage. Prevention of multiple process executing through the concept of semaphores.
CO3 Describe the concept of Mutual exclusion, Deadlock detection and agreement protocols for deadlock prevention and its avoidance.
CO4 Analyze the strategies of Memory management schemes and the usage of Virtual memory. Apply Replacement algorithms to avoid thrashing.
CO5 Brief study of storage management. Categorize the methods to allocate files for proper protection.

COURSE:SIMULATION AND MODELING **CREDIT:3**

Course Outcomes

CO1:Introduction To Modeling & Simulation, Input Data Analysis and Modeling.
CO2: Random Variate and Number Generation. Analysis of Simulations and methods.
CO3:Comparing Systems via Simulation
CO4: Entity Body Modeling, Visualization, Animation.
CO5: Algorithms and Sensor Modeling.

COURSE:QUANTITATIVE APTITUDE **CREDIT:3**

Course Outcomes

CO1: To gain knowledge on LCM and HCF and its related problems
CO2: To get an idea of age, profit and loss related problem solving.
CO3: Able to understand time series simple and compound interests
CO4: Understanding the problem related to probability, and series
CO5: Able to understand graphs, charts

PROJECT WITH VIVA VOCE **CREDIT:4**

Course Outcomes

CO1 Show Leadership Skills And Learn Time Management

CO2 Identify Various Tools To Be Applied To A Specific Problem

CO3 Evaluate The Reports

CO4 Take Part In A Team As Well As Manage It To Deliver Stunning Outcomes

CO5 Assess And Develop The Individual Skills To Present And Organize Projects

INTERNSHIP / INDUSTRIAL TRAINING **CREDIT:2**

Course Outcomes

CO1. Find their specific areas of interest , refine their skills and abilities

CO2. Show a greater sense of self-awareness and appreciation for others

CO3. Apply problem solving and critical thinking skills to solve real time problem

CO4. Design various solution approaches for addressing IT business needs.

CO5.Apply best practices of IT industries by working in the Product or service domain.

SEMESTER –VI

COURSE:IOT AND CLOUD TECHNOLOGIES **CREDIT:4**

Course Outcomes

CO1 Design an Iot system with cloud infrastructure.

CO2 Implement the M2M Communication protocols in a prototype

CO3 Understand the basic concepts of the main sensors used in electro mechanical systems

CO4 Understand/implement computer models of common engineering information types.

CO5 Understand storage mechanisms / analysis algorithms for data management in distributed & data intensive applications

COURSE:IOT AND CLOUD TECHNOLOGIES LAB **CREDIT:4**

Course Outcomes

CO1 Design an IoT system with cloud infrastructure.

CO2 Implement the M2M Communication protocols in a prototype

CO3 Understand the basic concepts of the main sensors used in electromechanical systems

CO4 Understand/implement computer models of common engineering information types.

CO5 Understand storage mechanisms / analysis algorithms for data management in distributed &data intensive applications

COURSE:ARTIFICIALINTELLIGENCE CREDIT:4

Course Outcomes

CO1 Understand the basics of the theory and practice of Artificial Intelligence as a discipline and about intelligent agents.

CO2 Understand search techniques and gaming theory

CO3 The student will learn to apply knowledge representation techniques and problem solving strategies to common AI applications.

CO4 Student should be aware of techniques used for classification and clustering.

CO5 Student should aware of basics of pattern recognition and steps required for it.

COURSE:ARTIFICIAL NEURAL NETWORK CREDIT:3

Course Outcomes

CO1: Understand the basics of artificial neural networks and its architecture.

CO2: Understand the various learning algorithms and their applications.

CO3: Identify the appropriate neural network model to a particular application.

CO4: Apply the selected neural network model to a particular application.

CO5: Analyze the performance of the selected neural network

COURSE:ANALYTICS FOR SERVICEINDUSTRY CREDIT:3

Course Outcomes

CO1 Understand and critically apply the concepts and methods of business analytics

CO2 Identify, model and solve decision problems in different settings.

CO3 Interpret results/solutions and identify appropriate courses of action for a givenmanagerial situation whether a problem or an opportunity.

CO4 Create viable solutions to decision making problems.

CO5 Instill a sense of ethical decision-making and a commitment to the long-run welfare of both organizations and the communities they serve.

COURSE:COMPUTINGINTELLIGENCE **CREDIT:3**

Course Outcomes

CO1: Describe the fundamentals of artificial intelligence concepts and searching techniques.

CO2: Develop the fuzzy logic sets and membership function and defuzzification techniques.

CO3:Understand the concepts of Neural Network and analyze and apply the learning techniques

CO4: Understand the artificial neural networks and its applications

CO5: Understand the concept of Genetic Algorithm and Analyze the optimization problems using GAs.

COURSE:DATA ANALYTICS USING RPROGRAMMING **CREDIT:3**

Course Outcomes

CO1 Work with big data tools and its analysis techniques.

CO2 Analyze data by utilizing clustering and classification algorithms.

CO3 Learn and apply different mining algorithms and recommendation systems for large volumes of data.

CO4 Perform analytics on data streams.

CO5 Learn NoSQL databases and management

COURSE:NATURAL LANGUAGEPROCESSING **CREDIT:3**

Course Outcomes

CO1 Describe the fundamental concepts and techniques of natural language processing. Explain the advantages and disadvantages of different NLP technologies and their applicability in different business situations.

CO2 Distinguish among the various techniques, taking into account the assumptions, strengths, and weaknesses of each use NLP technologies to explore and gain a broad understandingof text data.

CO3 Use appropriate descriptions, visualizations, andstatisticsto communicate theproblems and their solutions.use NLP methods to analyse sentiment of a text document.\

CO4 Analyze large volume text data generated from a range of real-world applications. Use NLP methods to perform topic modelling.

CO5 Develop robotic process automation to manage business processes and to increase and monitor their efficiency and effectiveness.Determine the framework in which artificial

intelligence and the Internet of things may function, including interactions with people, enterprise functions, and environments.

COURSE:CYBER FORENSICS **CREDIT:2**

Course Outcomes:

CO1: Understand the definition of computer forensics fundamentals.

CO2: Evaluate the different types of computer forensics technology.

CO3: Analyze various computer forensics systems.

CO4: Apply the methods for data recovery, evidence collection and data seizure.

CO5: Gain your knowledge of duplication and preservation of digital evidence.

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DEPARTMENT OF DATA SCIENCE

COURSE OUTCOME

I B. Sc DATA SCIENCE

2022-2023

Programme Outcomes:

PO1: Data Science knowledge: Application of Data Science knowledge in various fields of science, engineering and management etc.

PO2: Nature of Data Science: Understand the concise, precise and rigorous nature of Data Science.

PO3: Critical thinking: Develop the skill to think critically on abstract concepts of Data Science.

PO4: Problem analysis: Develop the ability to analyze a problem logically and dissect into micro-parts and thus resolving the problem to accessible components.

PO5: Presentation skill: Develop the skill to pleasant exposition for successful presentation for any career interview with confidence.

PO6: Data Science logic: Formulates and develops data analysis arguments in logical manner.

PO7: Team Work: Work as a team player and strive for self-excellence.

PO8: Ethics: Realize and understand professional, ethical and cultural responsibilities.

PO9: Communication: Communicate effectively with an elite audience.

PO10:Life-long learning: Engage in life-long learning towards enduring professional development.

Programme Specific Outcomes:

PSO1: Abstract Thinking: To develop the ability to understand abstract concepts that lead to various data science theories in Mathematics, Statistics, and Computer Science.

PSO2: Problem Analysis and Design Ability: To identify, analyze and design solutions for problems using the fundamental principles of Mathematics, Statistics, Computing Sciences, and relevant domain disciplines.

PSO3: Modern Software Tool Usage: To acquire the skill of handling data science programming tools for

problem-solving and solution analysis for domain-specific problems.

PSO4: Professional Ethics: To understand and commit to professional ethics, cyber regulations,

responsibilities, and norms of professional computing practices.

PSO5: Conduct investigations of complex computing problems: Use research-based knowledge and

research methods including design of experiments, analysis, interpretation of data, and synthesis of the information to provide valid conclusions.

PSO6: Individual and Teamwork: To function effectively as an individual, as a member or as a leader in diverse teams and multidisciplinary environments.

PSO7: Applications in Multidisciplinary domains: To understand the role of statistical approaches and apply the same to solve the real-life problems in the fields of data science.

PSO8: Project Management: To apply research-based knowledge to analyze and solve advanced problems in data science.

PSO9: Data-based models: To develop the ability to build and assess data-based models.

PSO10: Statistical analysis: To enable the students to execute statistical analyses with professional statistical software.

SEMESTER:I

Course : PROGRAMMING IN C Credit: 4

Course Outcomes

CO1. After studied unit-1, the student will be able to understand basic concepts like constants, variables, operators and
expressions.

CO2. After studied unit-2, the student will be able to understand the need of input output operations and decision
making.

CO3. After studied unit-3, the student will be able to understand the insights of arrays, character arrays and strings.

CO4. After studied unit-4, the student will be able to carry out operations on structures, unions and pointers.

CO5. After studied unit-5, the student will be able to understand the essential information regarding fundamental algorithms and factoring problems.

CORE PRACTICAL 1 : PROGRAMMING IN C LAB Credit : 2

COURSE OUTCOMES

CO1. To understand basic concepts like constants, variables, operators and expressions.

CO2. To understand the need of input output operations and decision making.

CO3. To understand the insights of arrays, character arrays and strings.

CO4. To carry out operations on structures, unions and pointers.

CO5. To understand the essential information regarding fundamental algorithms and factoring problems.

SEMESTER:II

Course : PROGRAMMING IN JAVA Credit: 4

Course Outcomes

CO1. After studied unit-1, the student will be able to understand the concept of General purpose and Purely object-oriented programming language including data types and classes

CO2. After studied unit-2, the student will be able to understand the concept of loops

CO3. After studied unit-3, the student will be able to understand the concepts of Arrays

CO4. After studied unit-4, the student will be able to understand the concepts of Files

CO5. After studied unit-5, the student will be able to understand the concept of internet programming using applets and GUI-based

CORE PRACTICAL 1 : PROGRAMMING IN JAVA LAB Credit : 2

COURSE OUTCOMES

CO1. After studied unit-1, the student will be able to understand the concept of purely object oriented programming language including data types and classes.

CO2. After studied unit-2, the student will be able to implement layout managers.

CO3. After studied unit-3, the student will be able to develop an application using frames.

CO4. After studied unit-4, the student will be able to understand the concepts of RMI.

CO5. After studied unit-5, the student will be able to handle exceptions in program.

SEMESTER:III

Course : PYTHON FOR DATA SCIENCE **Credit: 3**

Course Outcomes

CO1. After studied Unit I, the student will be able to understand basic concepts, flow control and functions.

CO2. After studied Unit II, the student will be able to understand the need for lists, strings and tuples and dictionaries.

CO3. After studied Unit III, To understand the insights of manipulating strings and pattern matching functions.

CO4. After studied Unit IV, To carry out operations on files and their operations.

CO5. After studied Unit V, To understand the essential information regarding the object oriented concepts.

CORE PRACTICAL III : **PYTHON FOR DATA SCIENCE LAB** **CREDIT: 3**

COURSE OUTCOMES

CO1. To understand basic concepts,flow control and functions.

CO2. To understand the need for lists, strings and tuples and dictionaries.

CO3. To understand the insights of manipulating strings and pattern matching functions.

CO4. To carry out operations on files and their operations.

CO5. To understand the essential information regarding the object oriented concepts

COURSE : Introduction To Information Technology **CREDIT: 2**

COURSE OUTCOMES

CO1. After studied Unit I, the student is able to understand the basic concepts of computers.

CO2. After studied Unit II, the student understands the need for storage devices and the CPU.

CO3. After studied Unit III, the student will understand the insights of computer networks and the various output devices.

CO4. After studied Unit IV, the student knows about computer software.

CO5. After studied Unit V, the student understands the essential information regarding the applications of Internet and its social impact.

SEMESTER:IV

COURSE : Advanced Python For Data Science CREDIT: 3

Course Outcomes

CO1. After studied unit-1, the student will be able to know about basic data types in Python.

CO2. After studied unit-2, the student will be able to know operators, how to clean ,merge datasets and networking concepts.

CO3. After studied unit-3, the student will be able to work with pandas library, the main methods for Data Frames and application programming interface.

CO4. After studied unit-4, the student will be able to work how to import data in Python.

CO5. After studied unit-5, the student will be able to know how to work with main packages

CORE PRACTICAL IV: Advanced Python Programming Lab Credit: 3

COURSE OUTCOMES

CO1. After studied unit-1, the student will be able to write simple Python programs gives basic

knowledge.

CO2. After studied unit-2, the student will be able to understand Multithreading

CO3. After studied unit-3, the student will be able to create email.

CO4. After studied unit-4, the student will be able to understand JSON.

CO5. After studied unit-5, the student will be able to visualization.

COURSE: Internet Technology **Credit: 2**

COURSE OUTCOMES

CO1. After studied unit-1, the student will be able to understand the Fundamentals of Internet, Connectivity and its Resource Requirements.

CO2. After studied unit-2, the student will be able to understand the Internet Technology and its applications

CO3. After studied unit-3, the student will be able to understand the basis of WWW and Web Browsers.

CO 4. After studied unit-4, the student will be able to learn how to Mailing system and applications of Internet.

CO5. After studied unit-5, the student will be able to Understand relay chat that is how to read e-contents.

Semester: V

Course : Relational Database System **Credit: 4**

Course Outcomes

CO1. After studied Unit I, the student is able to understand the database archiotecture and ER modeling.

CO2. After studied Unit II, the student understands the need for the relational model.

CO3. After studied Unit III, the student will understand the insights of normalization.

CO4. After studied Unit IV, the student knows about storage and file organization.

CO5. After studied Unit V, the student understands the essential information regarding query processing and transaction management.

Course : Data Visualization Techniques Credit: 4

Course Outcomes

CO1. After studied Unit I, the student is able to understand the philosophy behind data visualization.

CO2. After studied Unit II, the student understands the need for Tableau I and the various chart types.

CO3. After studied Unit III, the student will understand the insights of Tableau II.

CO4. After studied Unit IV, the student gets a glimpse on various case studies.

CO5. After studied Unit V, the student understands the essential information regarding some of the statistical applications .

Course : Natural Language Processing Credit: 3

Course Outcomes

CO1. After studied Unit I, the student is able to understand the basic concepts of corpus.

CO2. After studied Unit II, the student understands the need for corpus annotation and speech processing.

CO3. After studied Unit III, the student will understand the insights of Morphology.

CO4. After studied Unit IV, the student knows about Syntax Sphere.

CO5. After studied Unit V, the student understands the essential informalities on Automata and Grammars

CORE PRACTICAL V: Relational Database Management System Lab CREDIT: 3

COURSE OUTCOMES

CO1. To understand the database architecture and ER modeling.

CO2. Understands the need for the relational model.

CO3. To understand the insights of normalization.

CO4. Knows about storage and file organization.

CO5. Understands the essential information regarding query processing and transaction management.

CORE PRACTICAL V: Data Visualization Technique Lab **Credit: 3**

COURSE OUTCOMES

CO1. The student is able to understand the philosophy behind data visualization.

CO2. The student understands the need for Tableau I and the various chart types.

CO3. The student will understand the insights of Tableau II.

CO4. The student gets a glimpse on various case studies.

CO5. The student understands the essential information regarding some of the statistical applications .

Course : Tensor Flow Credit: 3

Course Outcomes

CO1. After studied Unit I, the student is able to understand the basic concepts of tensorflow.

CO 2. After studied Unit II, the student understands the need for Linear and Logistic regression.

CO3. After studied Unit III, the student will understand the insights of variablr sharing and managing experiments.

CO4. After studied Unit IV, the student knows about convnet.

CO5. After studied Unit V, the student understands the essential information regarding the seq2seq with attention.

Semester: VI

Course : Big Data Analytics Credit: 4

Course Outcomes

CO1. After studied unit-1, the student will be able to understand the concepts of big data

CO2. After studied unit-2, the student will be able to understand the concepts of data storage in big data.

CO3. After studied unit-3, the student will be able to understand the concepts of Hadoop

CO4. After studied unit-4, the student will be able to understand the concepts of Map reduce.

CO5. After studied unit-5, the student will be able to understand the concepts of Storage of data with techniques

Course : R for Analyticals Credit: 4

Course Outcomes

CO1. After studied unit-1, the student will be able to understand the concepts R programming

CO2. After studied unit-2, the student will be able to understand the concepts of data frames

CO3. After studied unit-3, the student will be able to understand the concepts of univariate and bivariate data.

CO4. After studied unit-4, the student will be able to understand the concepts of multivalued data.

CO5. After studied unit-5, the student will be able to understand the concepts of correlations

CORE PRACTICAL VI: Big Data Analytical Lab CREDIT: 3

COURSE OUTCOMES

CO1. The student will be able to understand the concepts of big data

CO2. The student will be able to understand the concepts of Hadoop file system.

CO3. The student will be able to understand the concepts of simple programs.

CO4. The student will be able to understand the concepts of min and max values.

CO5. The student will be able to understand the concepts of MongoDB.

CORE PRACTICAL VI: R for Analytical Lab CREDIT: 2

COURSE OUTCOMES

CO1. The student will be able to understand the concepts Numbers and vectors

CO2. The student will be able to understand the concepts of arrays and matrices

CO3. The student will be able to understand the concepts of categorical and numerical data.

CO4. The student will be able to understand the concepts of dplyr pacakages.

CO5. The student will be able to understand the concepts of correlations.

Course : Artificial Intelligence Credit: 3

Course Outcomes

CO1. After studied unit-1, the student will be able to understand the concepts of artificial neural network

CO2. After studied unit-2, the student will be able to understand the concepts of problem solving methods

CO3. After studied unit-3, the student will be able to understand the objects and reasoning in AI.

CO4. After studied unit-4, the student will be able to understand the concepts of fuzzy logic.

CO5. After studied unit-5, the student will be able to understand the concepts of speech recognition.

Course : Operating System Credit: 3

Course Outcomes

CO1. After studied unit-1, the student will be able to learn operating system structure and services.

CO2. After studied unit-2, the student will be able to Enrich the process scheduling skills.

CO3. After studied unit-3, the student will be able to know about memory allocation.

CO4. After studied unit-4, the student will be able to understand disk structure and allocation methods.

CO5. After studied unit-5, the student will be able to understand LINUX system.