


CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (A)

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Feedback Analysis for the year 2023-2024

s.no	Content	Page no
1	Action plan	2
2	Proofs	3


Department of Artificial Intelligence
and Machine Learning
CBIT (A), Gandipet, Hyderabad-500 075.

Chaitanya Bharathi Institute of Technology (Autonomous)
Gandipet, Hyderabad – 500075
Department of Artificial Intelligence and Machine Learning

Consolidated Action taken report on the Feedback obtained from Stake Holders
AY : 2023-2024

S.No	Suggestions received	Feedback obtained from	Stake Holder Details	Action Taken	Remarks
1	Include Java Programming and Full Stack Development courses as core courses.	Student	Sathvika 160120748011	Java Programming course is included in R22-A	Syllabus of Java programming Course
2	Include more new age technologies	Student	Gowtham 160120748028	Java Programming course is included in R22-A, Generative AI were introduced	Syllabus of Java programming and Generative AI Courses
3	Include Java Programming and Mini Projects as mandatory courses.	Student	Shiva Ganesh 160120748055	Java Programming course is included in R22-A and Mini Projects course is introduced in R22	Syllabus of Java programming Course and Mini Project course.
4	Introduce new age Technologies	Parent	S.Chandraiah Govt. Teacher f/o S.Shiva Ganesh	Generative AI, UAV, Robot Proces Automation, Cognitive computing	Syllabus of Generative AI, UAV, Robotic Process Automation, Cognitive computing courses.


 Department of Artificial Intelligence
 and Machine Learning
 CBIT (A), Gandipet, Hyderabad-500 075.

22ITC02N

JAVA PROGRAMMING

Instruction

3L Hours per week

Duration of SEE

3 Hours

SEE

60 Marks

CIE

40 Marks

Credits

3

Course Objectives:

This course aims to:

1. Deliver the object-oriented programming features and principles for code development.
2. Explore the reusability of the code, coupling and cohesion.
3. Handle the exceptions and multiple flow of the execution.
4. Understand the collection framework.
5. Develop the IO and database applications.

Course Outcomes:

Upon successful completion of this course, students will be able to:

1. Apply the concept of OOP to design, implement and execute programs.
2. Use the strings, interfaces, packages and inner classes for application development.
3. Apply the exception handling mechanisms and multithreading for the development.
4. Develop applications using collection framework.
5. Develop database applications using SQL package.

CO-PO Articulation Matrix

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3	3	2	2	-	1	2	1	2	2
CO2	2	2	3	2	2	1	-	1	2	1	2	2
CO3	2	2	3	2	2	1	-	1	2	1	2	2
CO4	2	2	3	2	2	1	-	1	2	1	2	2
CO5	2	2	3	2	3	1	-	1	2	1	2	2

UNIT-I

Introduction to Java: Procedural and object-oriented programming paradigms, Principles, Features, Basic structure a java program, Java Primitive Data Types, Basic Operators, Flow-control statements. Defining Classes, Adding Instance Fields and Methods, Object Creation, Constructors, Access Modifiers, Method Overloading and Constructor Overloading, Use of static and final keyword, Arrays, Strings and String Tokenizer.

UNIT-II

Inheritances and Packages: Types of Inheritance, super keyword, preventing inheritance, the Object class, method overriding and dynamic method dispatch, abstract classes and methods. Interfaces, Interfaces vs. Abstract classes, Inner classes and types, Packages, Creating and Accessing a Package, Understanding CLASSPATH, importing packages.

UNIT-III

Exception Handling and Threading: What are exceptions, Error vs. Exception, usage of try, catch, throw, throws and finally clauses, Multithreading in Java, Life cycle of Thread, how to create threads, Thread class in java, Thread priorities, Thread Synchronization. Introduction to Generics, Advantages of Generics, Generic class, Type Parameters, Generic Methods.

UNIT-IV

Collections: Overview of Java Collection Framework, Collection Interfaces – Collection, Set, List, Map, Collection classes – Array List, Linked List, Hash Set, Tree Set, Hash Map, Tree Map, Iteration over Collections – Iterator and List Iterator, Enumeration interfaces, differentiate Comparable and Comparator interface, Introduction to Java 8 Features, Lambda Expressions, Functional Interfaces.

UNIT-V

Streams: FileStream, ObjectOutputStream, Serialization, Servlets: Introduction to Servlets, Servlet Life cycle, Database: Connecting to Database - JDBC, Drivers, Connection, Statement and its types, Result set, CRUD operations, Databases using JSP.

Text Books:

1. Herbert Schildt, "Java: The Complete Reference", 12th Edition, Tata McGraw Hill Publications, 2020.
2. K Somasundaram "Advanced Programming in Java2" Jaico Publishing House, 2008.
3. Bruce W.perry "Java Servlet and JSP Cookbook", O'reilly Media Inc., 2004.

Suggested Reading:

1. Sachin Malhotra, Saurabh Choudhary, "Programming in Java", Oxford University Press, 2nd Edition, 2014.
2. C.ThomasWu, "An Introduction to Object-Oriented Programming with Java", TataMcGraw-Hill, 4th Edition, 2010.
3. E Balaguruswamy "Programming with Java", TataMcGraw-Hill, 6th Edition, 2019.
4. Cay S. Horstmann, Gary Cornell, "Core Java, Volume I— Fundamentals", 8th Edition, Prentice Hall, 2008.
5. K Somasundaram "Introduction to Java Programming", Jaico Publishing House, 2016.
6. Paul Deitel and Harvey Deitel "Java How to Program, Early Objects", 11th Edition., 2018.

Web Resources:

1. https://www.cse.iitb.ac.in/~nlp-ai/javalect_august2004.html
2. <https://nptel.ac.in/courses/106106147/2>


Department of Artificial Intelligence
and Machine Learning
CBIT (A), Gandipet, Hyderabad-500 075.

22ITC03N**JAVA PROGRAMMING LAB**

Instruction	2P Hours per week
Duration of SEE	3 Hours
SEE	50 Marks
CIE	50 Marks
Credits	1

Course Objectives:

This course aims to:

1. Deliver the basic principles of OOP.
2. Explore the object-orientation process in creating classes, object, etc.,
3. Demonstrate the inheritances and polymorphism.
4. Handle the exceptions in runtime and multithreading.
5. Develop the database applications.

Course Outcomes:

Upon successful completion of this course, student will be able to:

1. Practice the basics of OOPs to develop java applications.
2. Use the inheritance and interfaces for application development.
3. Apply the exception handling and multithreading to handle multiple flows of execution.
4. Develop applications using collection framework.
5. Apply the SQL concepts for application development.

CO-PO Articulation Matrix

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3	3	2	2	-	1	2	1	2	2
CO2	3	3	3	2	2	1	-	1	2	2	2	3
CO3	2	2	3	2	2	1	-	1	2	1	2	2
CO4	2	2	3	2	2	1	-	1	2	1	2	2
CO5	3	3	3	2	3	1	-	1	2	2	2	3

LIST OF EXPERIMENTS

1. Implement the program(s) to handle the various data types, operators, expressions, control-flow, and strings.
2. Develop a java program(s) for constructors.
3. Develop a java program to demonstrate the dynamic method dispatch.
4. Develop a java program(s) to deal with different types of inheritances and interfaces.
5. Implement the program(s) to demonstrate the packages.
6. Develop a java program(s) to handle user defined exceptions with multiple catch blocks.
7. Implement program(s) to demonstrate Multithreading and thread synchronization.
8. Implement program(s) to demonstrate generics.
9. Implement the collection framework classes with Iterator/List Iterator/Enum Interface.
10. Develop a java program(s) to implement the features of JDK8.
11. Implement a java program(s) to implement the concept of Servlets and JSP.
12. Create a web application to implement CRUD operations using Servlets, JSP and Databases.

22ADE
14

**GENERATIVE AI
(Professional Elective-II)**

Instruction	3 Hours per Week
Duration of SEE	3 Hours
SEE	60 Marks
CIE	40 Marks
Credits	3

Course Objectives:

1. To learn the fundamental concepts of Generative AI
2. To acquire the knowledge of encoders, decoders and autoregressive models
3. To acquire the knowledge of various generative models for image generation, style transfer and text generation
4. To learn to apply transforms, prompt engineering and APIs for real world problems
5. To learn to implement develop application using chat GPTs and open API

Course Outcomes:

Upon successful completion of this course, students will be able to

1. Understand the fundamental concepts and significance of Generative AI and the unique challenges associated with generative models.
2. Learn the structure, function, and applications of autoencoders and autoregressive models in machine learning.
3. Understand the principles, architecture, and applications of Generative Adversarial Networks for image generation and style transfer.
4. Grasp the architecture and functionality of transformers, and apply prompt engineering techniques using Hugging Face pretrained transformers and APIs.
5. Explore the advancements, capabilities, and practical applications of GPT models, including developing a GPT-3 powered question-answering application.

**CO-PO Articulation
Matrix:**

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	2	-	-	-	-	-	-	-	-
CO2	2	2	2	2	3	-	-	-	-	-	-	-
CO3	3	3	3	3	3	-	-	-	-	-	-	-
CO4	3	3	3	3	3	-	-	-	-	-	-	-
CO5	3	3	3	3	3	-	-	-	-	-	-	-

UNIT-I

Introduction: An Introduction to Generative AI, Applications of AI, The rules of Probability, Why use generative models, Unique challenges of generative models.

UNIT-II

Auto Encoders and Autoregressive Models: Auto encoders, Regularized autoencoders, Stochastic Encoders and Decoders, Autoregressive Models, Fully Visible sigmoid Belief Network (FVSBN), Neural Autoregressive Density Estimation (NADE), Masked Autoencoder for Distribution Estimation (MADE)

UNIT III

Generative Adversarial Network: Generative Adversarial Networks, Vanilla GAN, Progressive GAN, Style transfer and Image transformation, Image Generation with GANs, Style Transfer with GANs

UNIT-IV

Transformers and Prompt Engineering: Transformers, Large Language Models, MLM/NSP, Generative Pretrained Transformers (GPT), Task – Specific GPT Fine Tuning, Prompt Engineering, Hugging face pretrained Transformers, Hugging face APIs

UNIT-V

Chat GPTs and OpenAI GPT 3, 3.5, 4, OpenAI APIS, working with the OpenAI Playground, Application and Use Cases: Content Filtering, Generating and Transforming Text, Classifying and Categorizing Text, building a GPT-3, Powered Question, Answering APP

Text Books:

1. Steve Tingiris Exploring GPT-3, Packt Publishing Ltd. Uk, 2021
2. Joseph Babcock Raghav Bali, Generative AI with Python and Tensor flow 2, Packt Publishing Ltd. UK, 2021

Suggested Reading:

1. Sabit Ekin, Prompt Engineerign for Chat GPT: Aquick Guide to Techniques, Tips, and Best Practices, DOI: 10.36227/techrxiv.22683919.v2, 2023
2. Fregly Chris, Antje Barth, and Shelbee Eigenbrode. Generative AI on AWS: building context-aware multimodal reasoning applicaions, Orielly, 2023.
3. Auffarth, B. "Generative AI with Langchain: Build large language model (LLM) apps with python, chatgpt, and other llms." Packt Publishing, 2023.

Web Resources:

1. <https://huggingface.co/>
2. <https://www.udemy.com/course/generative-ai-for-beginners-b/>
3. <https://www.coursera.org/learn/generative-ai-with-llms?>
4. <https://ai.google/discover/generativeai/>


Department of Artificial Intelligence
and Machine Learning
CBIT (A), Gandipet, Hyderabad-500 075.

22CAC03

MINI PROJECT

Instruction
SEE
CIE
Credits

1T+2P Hours per week
50 Marks
50 Marks
2

COURSE OBJECTIVES: The aim of course is

1. To explore the literature and formulate a project proposal.
2. To enhance presentation skills and technical writing proficiency.
3. To provide solutions by using modern tools.
4. To Expose Students to Project Based Learning.
5. To effective presentation and documentation.

COURSE OUTCOMES: After completion of this course, students will be able to

1. Interpret Literature the purpose of formulating a project proposal.
2. Plan, Analyze, Design and implement a project.
3. Find the solution of an identified problem with the help of modern Technology and give priority to realtime scenarios.
4. Plan to work as a team and to focus on getting a working project done and submit a report within astipulated period of time.
5. Prepare and submit the Report and deliver a presentation.

**CO-PO ARTICULATION
MATRIX**

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
CO4												
CO5												

The Students are required to choose a topic for a mini project related to the courses of the current semester or previous semester. The student has to implement and present the project as per the given schedule. During the implementation of the project, Personnel Software Process (PSP) has to be followed. Report of the project work has to be submitted for evaluation.

**SCHED
ULE**

S No	Description	Duration
1.	Problem Identification / Selection	2 weeks
2.	Preparation of Abstract	1 week
3.	Design, Implementation and Testing of the Project	7 weeks


ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

4.	Documentation and Project Presentation	4 weeks
----	--	---------

Guidelines for the Award of Marks

S No	Description	Max. Marks
1.	Weekly Assessment	20
2.	PPT Preparation	5
3.	Presentation	10
4.	Question and Answers	5
5.	Report Preparation	10

Final Mini Project demonstration and PPT presentation is to be evaluated for the entire class together by the entire faculty handling Mini Project for that class.


Department of Artificial Intelligence
and Machine Learning
CBIT (A), Gandipet, Hyderabad-500 075.

22ITE13

UNMANNED AERIAL VEHICLES

(Professional Elective IV)

Instruction	3 Hours per Week
Duration of SEE	3 Hours
SEE	60 Marks
CIE	40 Marks
Credits	3

Course Objectives: This course aim to:

1. Explain the locomotion principle, describe different types of mobile robots, and the basics of Unmanned Aerial Vehicles (Drones) and its various applications.
2. Learn the drone’s working principle and explain the components used to build the drone devices.
3. Provide hands-on experience on the design, fabrication, and flying of UAV-category aircraft.
4. Explain the rules and regulations to the specific country to fly drones.
5. Introduce safety measures to be taken during flight.

Course Outcomes (COs): Upon completing this course, students will be able to:

1. Illustrate the types, characteristics, Applications of UAVs.
2. Analyze the concepts of Aerodynamics, Propulsion & Structures of Model aircraft.
3. Identify/Know the payload and its corresponding propeller’s RPM to fly the drone successfully.
4. Infer with the Launch and recovery mechanism of a UAVs.
5. Know the Navigation and Guidance System of UAVs.

CO-PO Articulation Matrix:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	-	-	-	-	-	-	-	-	-	-	-
CO2	3	3	-	-	-	-	-	-	-	-	2	-
CO3	3	3	-	-	-	-	-	-	-	-	2	-
CO4	3	3	3	3	3	-	-	-	-	-	2	-
CO5	3	3	3	3	3	-	-	-	-	-	2	-

UNIT-I

Introduction to Autonomous systems: Definition, Characteristics, differences between non autonomous Vs autonomous, Types of vehicles, Introduction to navigation and communication.

UNIT-II

Basics of navigation (Aerial and Ground): Different types of flight vehicles; Components and functions of an airplane; Forces acting on Airplane; Physical properties and structure of the atmosphere; Aerodynamics – aerofoil nomenclature, aerofoil characteristics, Angle of attack, Mach number, Lift and Drag, Propulsion and airplane structures.

UNIT-III

UAV / UGV Elements: Introduction to UAV and UGV, DGCA Classification of UAVs; Types and Characteristics of Drones: Fixed, Multi-rotor, Flight controller Software, MAVLINK protocol, Robot Arm Kinematics and Dynamics, Manipulator Trajectory planning and Motion Control, Robot Sensing, Robotic Operating System, Robotic Programming Languages.

UNIT-IV

Navigation and guidance: Data Link; Sensors and Payloads: GPS, IMU, Light Detection and Ranging (LiDAR), Imaging cameras, Classification of payload based on applications; Hyper-spectral sensors; Laser

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Detection and Range (LiDAR); cameras; ultra-sonic detectors; Introduction to navigation systems and types of guidance; Mission Planning and Control, Case studies: Autonomous Obstacle avoidance - Vision, Sonar and LiDAR.

UNIT-V

AI Drones: Benefits of Combining AI and Drones, Applications of AI-Powered Drones, Challenges and ethical considerations, Drone Swarm Technologies and Algorithms, Case Studies Drone Swarms, IoT Drones.

Text Books:

1. Andey Lennon “Basics of R/C model Aircraft design” Model airplane news publication.
2. Theory, Design, and Applications of Unmanned Aerial Vehicles.

Suggested Reading:

1. Tom White. Hadoop - The Definitive Guide, 4th Edition, O’Reilly Publications, India, 2015.
2. Judith Hurwitz, Alan Nugent, Dr. Fern Halper, Marcia Kaufman. Big Data for Dummies, John Wiley & Sons, Inc., 2013.
3. Jane's Unmanned Aerial Vehicles and Targets -by Kenneth Munson (Editor), 2010
4. Guidance of Unmanned Aerial Vehicles- by Rafael Yanushevsky (Author), 2011.

Reference books and Resources:

1. Handbook of unmanned aerial vehicles, K Valavanis; George J Vachtsevanos, New York, Springer, Boston, Massachusetts : Credo Reference, 2014. 2016.
2. Building Your Own Drones: A Beginners' Guide to Drones, UAVs, and ROVs, John Baichtal
3. DGCA RPAS Guidance Manual, Revision 3 – 2020
4. K.S. Fu, R.C. Gonzalez, C.S.G. Lee, Robotics : Control, Sensing, Vision and Intelligence
5. Aaron Martinez, Enrique Fernandez, Learning ROS for Robotics Programming: A practical, instructive, and comprehensive guide to introduce yourself to ROS, the top-notch, leading robotics framework, PACKT publishing, Open Source.
6. John J. Craig, Introduction to Robotics: Mechanics and Control, Addison Wesley publication, Third Edition.


Department of Artificial Intelligence
and Machine Learning
CBIT (A), Gandipet, Hyderabad-500 075.

22CIE
14

**ROBOTIC PROCESS AUTOMATION
(Professional Elective - V)**

Instruction	3 Hours per week
Duration of SEE	3 Hours
SEE	60 Marks
CIE	40 Marks
Credits	3

Pre-Requisites:

Course Objectives

1. To provide insights on robotic process automation (RPA) technology and its value proposition
2. To introduce different platforms for RPA
3. To learn different types of variables, control flow and data manipulation techniques
4. To familiarize with Image, Text and data Tables Automation
5. To describe various types of Exceptions and strategies to handle them.

Course Outcomes: On Successful completion of the course, student will

1. Gain insights into Robotic Process Automation Technology
2. Acquire knowledge of RPA Platforms and components
3. Identify and understand Image, Text and Data Tables Automation
4. Understand various control techniques and OCR in RPA
5. Describe Exception Handling and Debugging techniques

CO-PO Articulation Matrix:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	2	2	-	-	-	-	-	-	-	1
CO2	3	2	1	1	1	-	-	-	-	-	-	-
CO3	3	2	1	2	1	-	-	-	-	-	-	-
CO4	3	2	1	1	-	-	-	-	-	-	-	-
CO5	2	2	1	2	1	-	-	-	-	-	-	-

Unit – I

RPA Foundations- What is RPA - flavors of RPA- history of RPA- The Benefits of RPA- The downsides of RPA- RPA Compared to BPO, BPM and BPA - Consumer Willingness for Automation- The Workforce of the Future- RPA Skills-On-Premise Vs. the Cloud- Web Technology- Programming Languages and Low Code OCR-Databases-APIs- AI-Cognitive Automation-Agile, Scrum, Kanban and Waterfall Devops- Flowcharts.

Unit – II

RPA Platforms- Components of RPA- RPA Platforms-About Ui Path- About UiPath - The future of automation - Record and Play - Downloading and installing UiPath Studio -Learning Ui Path Studio- - Task recorder - Step by step examples using the recorder.

Unit – III

Sequence, Flowchart, and Control Flow-sequencing the workflow- Activities-Control flow, various types of loops, and decision making-Step-by step example using Sequence and Flowchart-Step-by-step example using Sequence and Control Flow-Data Manipulation-Variables and Scope Collections-Arguments - Purpose and useData table usage with examples Clipboard Management-File operation with step-by-step example- CSV/Excel to data table and vice versa [with a step-by-step example).

Unit – IV

Handling Events -Taking Control of the Controls- Finding and attaching windows- Finding the 08 control- Techniques for waiting for a control- Act on controls - mouse and keyboard activities- Working with Ui Explorer- Handling eventsRevisit recorder- Screen Scraping- When to use OCR- Types of OCR available- How to use OCR- Avoiding typical failure points.

Unit – V

Exception Handling, Debugging, and Logging- Exception handling- Common exceptions and ways to handle them- Logging and taking screenshots Debugging techniques- Collecting crash dumps- Error reporting, Industry Use case, Future of RPA.

Text Books:

1. Tom Taulli, “The Robotic Process Automation Handbook: A Guide to Implementing RPA Systems”, Apress Publishing, 2020
2. Alok Mani Tripathi, “Learning Robotic Process Automation”, Packt Publishing, 2018.

Reference Books:

1. Richard Murdoch, Robotic Process Automation: Guide to Building Software Robots, Automate Repetitive Tasks & Become an RPA Consultant, Independently Published, 1st Edition 2018.
2. Frank Casale , Rebecca Dilla, Heidi Jaynes , Lauren Livingston, “Introduction to Robotic Process Automation: a Primer”, Institute of Robotic Process Automation,1st Edition 2015.
3. Srikanth Merianda,”Robotic Process Automation Tools, Process Automation and their benefits: Understanding RPA and Intelligent Automation”, Consulting Opportunity Holdings LLC, 1st Edition 2018

Web References:

1. <https://www.uipath.com/rpa/robotic-process-automation>
2. <https://www.academy.uipath.com>


Department of Artificial Intelligence
and Machine Learning
CBIT (A), Gandipet, Hyderabad-500 075.

22CAE
05

**COGNITIVE COMPUTING
(Professional
Elective-III)**

Instruction	3 Hours per Week
Duration of SEE	3 Hours
SEE	60 Marks
CIE	40 Marks
Credits	3

Prerequisites: Artificial Intelligence

Course Objectives:

1. To understand the basics of Cognitive Computing.
2. To provide an understanding of the central challenges in realizing aspects of human cognition.
3. To provide a basic exposition to the goals and methods of cognition in relation with Natural Language processing and Big data Analytics.
4. To analyze and understand the Cognitive techniques to build applications.

Course Outcomes: After completion of the course, students will be able to

1. Understand what cognitive computing is, and how it differs from traditional approaches.
2. Interpret the use of Cognitive Computing in applying Natural language processing for business applications.
3. Analyze the association between Big data and Cognitive Computing.
4. Develop the business implications of cognitive computing.
5. Familiarize Advanced Analytics to Cognitive Computing for building Open source tools.
6. Apply cognitive techniques to develop applications.

**CO-PO Articulation
Matrix:**

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	2	1	1	-	-	-	-	-	1
CO2	2	2	3	2	2	2	1	-	-	-	-	1
CO3	2	2	3	3	2	2	-	-	-	1	2	1
CO4	2	2	2	2	2	2	1	-	-	-	-	1
CO5	2	2	2	2	2	2	1	-	-	1	2	1

UNIT-I:

Foundation of Cognitive Computing: Cognitive computing as a new generation, the uses of cognitive systems, system cognitive, gaining insights from data, Artificial Intelligence as the foundation of cognitive computing, understanding cognition.

Design Principles for Cognitive Systems: Components of a cognitive system, Cognitive architectures, building the corpus, bringing data into cognitive system, machine learning, hypotheses generation and scoring, presentation and visualization services.

UNIT-II:

Natural Language Processing in support of a Cognitive System: Role of NLP in a cognitive system, semantic web, Applying Natural language technologies to Business problems.

Representing knowledge in Taxonomies and Ontologies: Representing knowledge, Defining Taxonomies and Ontologies, knowledge representation, models for knowledge representation, implementation considerations.

Chaitanya Bharathi Institute of Technology(A)

UNIT-III:

Relationship between Big Data and Cognitive Computing: Dealing with human-generated data, defining big data, architectural foundation, analytical data warehouses, Hadoop, data in motion and streaming data, integration of big data with traditional data.

Applying Advanced Analytics to cognitive computing: Advanced analytics is on a path to cognitive computing, Key capabilities in advanced analytics, Using advanced analytics to create value, Impact of open source tools on advanced analytics.

UNIT-IV:

The Business Implications of Cognitive Computing: Preparing for change, advantages of new disruptive models, knowledge meaning to business, difference with a cognitive systems approach, meshing data together differently, using business knowledge to plan for the future , answering business questions in new ways , building business specific solutions , making cognitive computing a reality , cognitive applicationchanging the market.

The process of building a cognitive application: Emerging cognitive platform, defining the objective, defining the domain, understanding the intended users and their attributes, questions and exploring insights, training and testing

UNIT-V:

Building a cognitive health care application: Foundations of cognitive computing for healthcare, constituents in healthcare ecosystem, learning from patterns in healthcare Data, Building on a foundation of big data analytics, cognitive applications across the health care eco system, starting with a cognitive application for healthcare, using cognitive applications to improve health and wellness, using a cognitive application to enhance the electronic medical record using cognitive application to improve clinical teaching.

Text Books:

1. Judith H Hurwitz, Marcia Kaufman, Adrian Bowles , “Cognitive computing and Big Data Analytics” , Wiley

Reference Books:

1. Cognitive Computing: Theory and Applications: Volume 35 (Handbook of Statistics) Hardcover – Import, 9 September 2016 by Vijay V Raghavan (Author), Venkat N. Gudivada (Author), VenuGovindaraju (Author), C.R. Rao Professor (Author).

Online Resources:

1. http://ccn.psych.purdue.edu/papers/cogArch_agent-springer.pdf
2. <https://www.sciencedirect.com/science/article/pii/S1877050915036595>
3. https://onlinecourses.nptel.ac.in/noc22_ee122/preview


Department of Artificial Intelligence
and Machine Learning
CBIT (A), Gandipet, Hyderabad-500 075.