IBM SUMMER TRAINING (OFFLINE)
COURSE – ARTIFICIAL INTELLIGENCE

OBJECTIVE OF THE COURSE

To provide an overview of an exciting field of Artificial Intelligence, To introduce the tools required to build and study the services like Watson Assistant and WKS, To teach the fundamental techniques and principles in achieving the concepts of machine learning and AI, To enable students to have skills that will help them to solve complex real-world problems regarding Artificial Intelligence, To study, understand and implement each unit according to National Education Policy 2020 and Bloom's Taxonomy.

DURATION OF THE COURSE: 60 HOURS (10DAYS).
MINIMUM ELIGIBILITY CRITERIA AND PRE-REQUISITE: BASIC KNOWLEDEGE OF PYTHON PROGRAMMING LANGUAGE

- **Module 1 (Day 1):**
  - Describing the eras of computing
  - Explaining the difference between deterministic and probabilistic systems
  - Describing the types of AI
  - Explaining what the main focus of AI is
  - Listing oc practical applications of AI
- **Module 1 (Day2):**
  - Explaining what cognitive computing is
  - Describing the characteristics of cognitive systems
  - Explaining the landscape of cognitive computing in the industry
  - AI Future trends
- **Module 1 (Day3):**
  - AI industry adoption approaches: AI Industry impact, autonomous Vehicles,
  - Smart robotics, future workforce and AI, IBM Watson and real-world problems, DeepQA Architecture, Commercialization of Watson, Watson Services – capabilities of each Watson service, Watson Knowledge Studio,
  - Usage of Watson API explorer.
- **Module 2 (Day4):**
  - Explaining what machine learning is
  - Describing the types of machine learning
  - Explaining what neural networks are and why they are important in today's AI's field
  - Explaining what domain adaptation is and its applications
- **Module 2 (Day5):**
  - Explaining what NLP is
  - Describing different NLP processes
  - Listing tools and services for NLP
  - Identifying NLP use cases
  - Learn how to build your own language translator with AI guide

- **Module 2 (Day6):**
  - Defining CV
  - Knowing the history of CV and its advancement with AI
  - Listing tools and services for CV
  - Identifying CV use cases
  - Analyze, Classify and detect objects using IBM Watson visual recognition service.
  - Explaining what cognitive computing is
  - Describing the characteristics of cognitive systems
  - Explaining the landscape of cognitive computing in the industry.
  - Classifying images using Node Red Guide
- **Module 3 (Day7):**
  - Describing different NLP processes
  - Listing tools and services for NLP
  - Identifying NLP use cases
  - Describing how to train Watson NLC
- **Module 3 (Day8):**
  - Defining the capabilities of Watson Natural Language Understanding (NLU) service and its input and output, along with the discovery service
  - Explaining the capabilities of the Watson Tone Analyzer service and its input and output
  - Working with Language translator and its implementation using CURL
  - Working with Text to speech and speech to text.
- **Module 4 (Day9):**
  - Explain what a chatbot is
  - Describe common applications of chatbots
  - Identify factors that drive the growing popularity of chatbots
  - List examples of tools and services that you can use to create chatbots
  - What a workspace is
  - What an intent is
  - What an entity is
  - What a dialog is
  - What dialog nodes are
- **Module 4 (Day 10):**
  - How the nodes in a dialog are triggered
  - How the dialog flow is processed
  - The advanced features of a chatbot
  - Create a workspace
  - Build a dialog
  - Create a Watson Conversation service instance
  - Create a Conversation workspace
  - Add intents
  - Projects