National Institute of Electronics & Information Technology Near IIT Patna, Amhara, Bihta, Patna(Bihar) -801106

Details of the Course

Name of The Course: Industrial training and internship in Artificial Intelligence(AI)

Duration (in Hrs.): 80(8 weeks)
Fee (in Rs.): Rs 4307/-
Eligibility: Diploma/B.Sc./B.Tech/ In Electronics, Electrical, Instrumentation Engineering, Computer Science, IT or its equivalent/BCA/MCA. (Completed or Pursuing).

Course Content:

Sl .No	**Topic**	**Subtopic**	Duration(in Hrs)
1	Introduction to Python Programming	Python Programming fundamentals, Installing Python IDE, Data Types, Operators and expressions, Variable assignments, Mutable and Immutable data, String, List, Tuple, Dictionary, Properties and Methods, Python Conditional Statements, If, elif, else, for, while, Functions in Python, Variable argument function, args, kwargs, Oops concepts, Python as oops, Attributes and class, Methods, Inheritance	10
2	Python Modules and Packages for AI	Modules and Packages in Python, Collection, OS module, Math, Random, Regular Expressions, Python Packages for Data Science (Numpy, Pandas and Matplotlib), Data exploration (histograms, bar chart, box plot, line graph, scatter plot) Properties, Methods, Functions, Scikitlearn, Keras, TensorFlow	10
3	Fundamentals of AI & Machine Learning	Introduction to machine learning and AI, AI Terminology, The Necessity of Learning AI, Goals and applications of AI, AI issues, concerns and Ethical AI, AI future, Generative AI, Prompt Engineering	10

4	Statistics for AI	Basics of Statistics, Statistics, and Its types, Numerical and Categorical data, Descriptive Statistics, Qualitative and Quantitative Data, Measure of Central Tendency (Mean, Median and Mode), Measure of Positions (Quartiles, Deciles, Percentiles and Quantiles), Measure of Dispersion (Range, Median, Absolute deviation about median, Variance and Standard deviation, Z-score, Covariance, Correlation Coefficient, Measure of Distribution (Skewness and Kurtosis)	10
5	Machine learning	Data Preparation, Dataset, Data Preprocessing, Outlier detection, Missing value imputation, Encoding, Categorical Data, Splitting Data, Feature scaling Introduction to Supervised Learning, Unsupervised learning, , Regression and Classification, Regression Algorithms Simple Linear Regression, Decision Tree, Classification Algorithms, Logistic Regression, KNN, Clustering	10
6	Deep Learning	Neurons, Neural Networks, Activation Functions & their Types, Gradient Descent, Backpropagation, Artificial neural networks, Convolutional Neural Networks, Image classification, Text classification	10
7	Computer Vision	Computer Vision, Installing Useful Packages, OpenCV, Reading, Writing, and Displaying an Image, Preprocessing and Image analysis, Colour Space Conversion, Image Thresholding, Object Detection, Image Segmentation, Face Detection, Eye Detection, Deep Learning for computer vision, YOLO	10
8	Natural Language Processing	Natural Language, Natural Language Processing - Problems and perspectives, Corpus, Text Analytics, Tokenisation and Sentence splitting, Stemming, Lemmatization, Feature Extraction, Sentence Segmentation, NLTK, Text Classification, Semantics and Sentiment Analysis, Deep Learning for NLP	10