



# AI Course Syllabus



## (1 to 12 Months)

### 1-Month AI Course

- Week 1: Introduction to AI
  - What is AI? History & Evolution
  - Types of AI: Narrow, General, Super AI
  - Applications of AI (Healthcare, Finance, Education, etc.)
  - Introduction to Machine Learning & Deep Learning
- Week 2: Python for AI
  - Basics of Python Programming
  - Numpy, Pandas for data handling
  - Matplotlib, Seaborn for visualization
- Week 3: Basics of Machine Learning
  - Supervised vs Unsupervised Learning
  - Regression and Classification basics
  - Hands-on with Scikit-learn
- Week 4: Mini Project & Tools
  - Build a basic ML model
  - Introduction to ChatGPT & AI tools like Teachable Machine
  - Final Quiz & Feedback

### 2-Month AI Course

- Includes 1-month content plus:
- Week 5: Advanced ML Algorithms
  - Decision Trees, Random Forest, KNN
  - Model Evaluation (Confusion Matrix, Precision, Recall)
- Week 6: Introduction to Neural Networks
  - Perceptron and ANN basics
  - Activation Functions
  - Introduction to TensorFlow/Keras
- Week 7: AI Tools & Applications
  - AI in Image Recognition, NLP, and Chatbots
  - Tools: OpenCV, HuggingFace demo
- Week 8: Project & Presentation
  - Mini project (image classifier or chatbot)
  - Presentations & certificate distribution

### 3-Month AI Course

- Includes 1- and 2-month content plus:
- Week 9: Deep Learning Essentials
  - Convolutional Neural Networks (CNNs)
  - RNNs and LSTMs (basics)
- Week 10: Natural Language Processing (NLP)

- - Text preprocessing, Bag of Words
- - Sentiment analysis, Text classification
- Week 11: AI Model Deployment
- - Saving models (Pickle/Joblib)
- - Deploying with Flask or Streamlit
- Week 12: Final Project
- - Choose project: Text, Image, or Data-based
- - Evaluation, Presentation

## 6-Month AI Course

- Includes 3-month content plus:
- Month 4:
  - - Reinforcement Learning Introduction
  - - Advanced Deep Learning (Transfer Learning, ResNet, Inception)
  - - Object Detection: YOLO, Haar cascades
- Month 5:
  - - Advanced NLP: Transformers, BERT, GPT models overview
  - - Real-world datasets (Kaggle, UCI)
  - - Chatbot development with Rasa/Dialogflow
- Month 6:
  - - AI Project Lifecycle & MLOps Basics
  - - Model Deployment on Cloud (Heroku, AWS, GCP)
  - - Ethics in AI, Bias & Fairness
  - - Capstone Project & Viva

## 12-Month AI Course

- Includes 6-month content plus:
- Month 7–8: Advanced Specialization Tracks
  - - Computer Vision, NLP, Robotics + AI, AI in Business
- Month 9–10:
  - - MLOps: CI/CD pipelines, Docker, Kubernetes for AI
  - - Data Engineering for AI: Big Data, Spark, ETL
  - - AI + Web Integration (Flask + React)
- Month 11:
  - - Research Paper Reading & Writing
  - - Kaggle Competitions & Model Benchmarking
  - - Real Industry Problem Solving
- Month 12:
  - - Final Major Project (Industry level)
  - - Documentation, Presentation
  - - Guest Lectures, Internships, Career Guidance



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