1. Basic AI/ML Course (60 hrs)

Ideal for those taking their first steps into the world of AI:

Module	Topics	Duration
Module 1: Introduction to Machine Learning	- What is Machine Learning? - Types of Machine Learning: Supervised, Unsupervised, Reinforcement - Applications of ML - Basic Concepts: Data and Labels, Overfitting, Underfitting - Tools and Libraries: NumPy, Pandas, Matplotlib, Scikit-learn	6 hours
Module 2: Python for Data Science	- Data Structures in Python: Lists, Tuples, Sets, Dictionaries - Arrays and DataFrames: NumPy, Pandas - Data Loading and Preprocessing: Handling missing data, transformation techniques - Data Visualization: Plotting with Matplotlib and Seaborn	6 hours
Module 3: Statistics and Probability	Statistics: - Descriptive Statistics: Mean, Median, Mode, Variance, Standard Deviation - Distributions: Normal, Binomial, Poisson - Measures of Correlation: Pearson, Spearman Probability: - Conditional Probability - Bayes' Theorem - Probability Distributions	8 hours
Module 4: Supervised Learning	Linear Regression: Theory and Implementation - Multiple Linear Regression - Model Evaluation: MSE, RMSE, R-squared	5 hours
	Classification Algorithms: - Logistic Regression - K-Nearest Neighbors (KNN) - Support Vector Machines (SVM) - Decision Trees - Model Evaluation: Confusion Matrix, Accuracy, Precision, Recall, F1-score	10 hours
Module 5: Unsupervised Learning	Clustering: - K-Means Clustering - Hierarchical Clustering - Evaluation of Clustering	5 hours

	Dimensionality Reduction: - Principal Component Analysis (PCA) - t-SNE for High-Dimensional Data	5 hours
Module 6: Model Evaluation and Hyperparameter Tuning	- Cross-validation: K-fold Cross-validation - Bias-Variance Tradeoff - Learning Curves and ROC Curves - Precision-Recall and AUC-ROC curves - Hyperparameter Tuning: Grid Search, Random Search	6 hours
Module 7: Advanced Topics	Ensemble Methods: - Bagging (Random Forests) - Boosting (AdaBoost, Gradient Boosting Machines, XGBoost)	4 hours
	Introduction to Neural Networks: - Basics of Neural Networks - Activation Functions (Sigmoid, ReLU) - Introduction to Keras for building simple neural networks	4 hours
Module 8: Hands-on Project	- Select a real-world problem for supervised learning - Data preprocessing, feature engineering, and model implementation - Model evaluation and hyperparameter tuning - Final project presentation	5 hours
Module 9: Career Development & Wrap-up	- How to build a portfolio for ML projects - Resume building and LinkedIn optimization for ML jobs - Final Q&A session	3 hours
Total		**60 hours**