AI & Robotics Course Plan (Grade 6–10)

Learning Goal

Students will build robots while understanding AI concepts such as machine learning, computer vision, data analysis, and autonomous decision-making.

Week	Class 1	Class 2
1	Introduction to Robotics and AI	AI Applications in Industry and Education
2	Arduino and Robot Components	AI-Powered Robots Case Studies
3	Arduino Programming Basics	Using AI Tools for Coding Assistance
4	Sensors and Data Collection	How Machine Learning Uses Data
5	Motor Control and Automation	AI Decision-Making Systems
6	Mobile Robot Construction	Autonomous Robot Concepts
7	Line Following Robot	Introduction to Computer Vision
8	Obstacle Avoidance Robot	Sensor Fusion and Smart Navigation
9	AI Model Training with Teachable Machine	Object Recognition Project
10	AI + Robotics Integration	Voice-Controlled or Gesture-Controlled Robot
11	Final Project Development	AI Feature Integration
12	Project Exhibition	Presentation and AI Ethics Discussion

AI Tools for Classroom Activities

- ChatGPT
- Google Teachable Machine
- Scratch (for AI demonstrations only if desired)
- Arduino IDE

Suggested Final Projects (Grade 6–10)

1. AI-Based Line Following Robot

2. Smart Obstacle Avoiding Robot
3. Voice-Controlled Robot
4. AI Attendance System with Face Recognition
5. Smart Parking System
6. AI Waste Segregation Robot
7. AI Smart Home Model
8. AI Plant Monitoring System