Table of Contents – AI Teacher Training Program

Module 1: Foundations of AI Education (1.5 hours)

Objective: Build understanding of the AI curriculum, structure, and pedagogy.

Topics Covered:

1. Overview of CBSE AI Curriculum (2024–25)
2. Learning Outcomes & Assessment Patterns
3. Role of AI in Education and Sustainable Development Goals (SDGs)
4. Pedagogical Framework: Inquiry-based and Project-based Learning
5. Classroom Implementation Strategies

Activity:

- *Group Discussion:* "AI in Everyday Life" – identifying classroom examples of AI.

Module 2: AI Concepts and Domains (1.5 hours)

Objective: Strengthen teachers' conceptual clarity of AI fundamentals and applications.

Topics Covered:

1. What is Intelligence? Human vs Artificial Intelligence
2. Overview of AI, ML, and DL
3. AI Domains: Data Science, Computer Vision, and Natural Language Processing
4. Real-life AI Applications
5. AI Ethics and Responsible AI

Tools & Demonstrations:

- AutoDraw, Impact Filter, Wordtune, and MIT Moral Machine Simulation

Module 3: AI Project Cycle and Hands-on Pedagogy (1.5 hours)

Objective: Enable teachers to guide students through the AI Project Cycle effectively.

Topics Covered:

1. Understanding the AI Project Cycle
    - Problem Scoping
    - Data Acquisition & Exploration
    - Modelling & Evaluation
2. Integrating AI Projects with SDGs

3. Approaches to Formative Assessment

Hands-on Activities:

- Supervised Learning using *Teachable Machine*
- Unsupervised Learning using *Infinite Drum Machine*

Module 4: Python and Data Science for Teachers (1.5 hours)

Objective: Equip teachers with foundational coding and data analysis skills for practical sessions.

Topics Covered:

1. Python Refresher (Anaconda, Jupyter Notebook)
2. Basics of Python: Variables, Loops, Functions
3. Libraries for Data Science – NumPy, Pandas, Matplotlib
4. Data Visualization and Basic Statistics (Mean, Median, Mode, SD)

Hands-on Practice:

- Creating datasets and visualizing them in Python
- Interpreting graphs and charts

Module 5: Advanced Applications and Evaluation in AI (1.5 hours)

Objective: Prepare teachers to teach Computer Vision, NLP, and Evaluation effectively.

Topics Covered:

1. Computer Vision – Image Representation, RGB Concepts, OpenCV Demonstration
2. Natural Language Processing – Chatbots, Bag-of-Words, Text Normalization
3. AI Model Evaluation Metrics – Accuracy, Precision, Recall, F1 Score
4. Assessment Rubrics for Projects and Practicals

Hands-on Practice:

- Image Processing in OpenCV
- Simple Chatbot Demo using Text Rules
- Confusion Matrix Exercise

Supplementary Add-ons (Optional for Extended Program)

- **AI Ethics & Bias Mitigation Workshop** (1 hour)
- **Design Thinking for AI Projects** (1 hour)
- **Integrating AI Across Subjects** (0.5 hour)

Expected Learning Outcomes

By the end of the 5-module program, teachers will be able to:

1. Understand and deliver all seven AI units confidently.
2. Use Python, Data Science, CV, and NLP tools in classroom teaching.
3. Facilitate student projects aligned with SDGs.
4. Assess AI practicals and projects using rubrics.
5. Instill ethical, responsible AI understanding in learners.