**Deliverables Documentation**

**Project Title:** Attendance Tracking System

**Deadline:** May 15, 2025   
**Final Deployment Date:** May 22, 2025

**1. System Scope Definition**

**Deliverables:**

System Requirements Document

Features and Limitations Overview

**Summary:**

Outlined the essential features needed for the system, including functions for attendance tracking, secure user access, and report generation.

**2. User Role Identification and Access Control**

**Deliverables:**

User Role and Permissions List

Role-Based Access Control (RBAC) Chart

**Summary:**

Established three distinct roles—Administrator, Instructor, and Student—with clearly defined privileges. Enforced access control using RBAC to ensure security and role separation.

**3. Database Schema Design**

**Deliverables:**

Entity-Relationship Diagram (ERD)

Database Schemas covering Users, Attendance, Courses, and Devices

**Summary:**

Created organized database structures to efficiently handle users, attendance logs, course assignments, and device registrations.

**4. API Development**

**Deliverables:**

Endpoints for User and Attendance Management

Complete API Documentation

**Summary:**

Built secure REST APIs for registration, login, attendance handling, and course functions, aligned with the RBAC structure.

**5. Registration and Authentication System**

**Deliverables:**

Working Registration Module (for Instructors and Students)

Photo Upload Feature

Multi-Factor Authentication (MFA)

**Summary:**

Implemented secure sign-up and login flows. Instructors use MFA, while students are required to upload ID-style photos.

**6. Device Management**

**Deliverables:**

Device Registration/Deregistration System

Lost Device Tracker

**Summary:**

Enabled device tracking by allowing admins to manage instructor devices and locate any that are lost or unauthorized.

**7. QR Code-Based Attendance System**

**Deliverables:**

Barcode Scanner Integration

QR Code Generator for Students

**Summary:**

Allowed real-time attendance via QR code scanning, with logs tied to GPS and timestamp data for validation.

**8. Absence Drop Mechanism**

**Deliverables:**

Auto Absence Drop Logic

Attendance Validation Module

**Summary:**

Implemented a rule-based module that automatically removes students from a course after three consecutive absences, supporting academic policies.

**9. Attendance Reports**

**Deliverables:**

Downloadable Reports (PDF and CSV)

Reporting Dashboards for Admins and Students

**Summary:**

Provided tools for visualizing and exporting attendance data by course, student, or instructor.

**10. Data Security and Encryption**

**Deliverables:**

Password Hashing and Data Encryption

Secure Database Configuration

**Summary:**

Integrated strong encryption techniques to safeguard user passwords and sensitive information in the database.

**11. System Testing and Optimization**

**Deliverables:**

System Testing Summary

Bug Fix and Optimization Record

**Summary:**

Completed system-wide testing on May 15, 2025, resolving all reported issues to ensure optimal performance for launch.

**12. Final System Deployment**

**Deliverables:**

Deployment to Cloud (MongoDB Atlas or MySQL)

Deployment Guidelines and Documentation

**Summary:**

The system was successfully launched on May 22, 2025, with full functionality and readiness for live use.