

Course Execution Document

Course Title: Time Series Forecasting & NLP

Course Code: ML471

Client: SKI

Course Duration: 12 Days

Course Mode: Concept-Based + Exercise-Based Continuous Assessment

Course Title: Time Series Forecasting & NLP

1. Course Overview

1.1 Subject Details

Course Code & Name: ML471 – Time Series Forecasting & NLP

1.2 Course Delivery Model

Execution Style

- Concept-based structured delivery
- Daily portal-based hands-on exercises
- Continuous assessment-driven execution
- Assessment mapped to **Internal Assessment 1 (IA-1)**, **Internal Assessment 2 (IA-2)**, and **End-Semester Practical Examination**

Class Structure

- **5 hours/day** – Concept explanation with guided hands-on exercises
- **1 hour/day** – Q&A, discussion, and real-world Time Series & NLP use cases

Modules & Exercise Distribution

- **Total Modules:** 12

Exercise Distribution:

- **Day 1–8**
 - 2–5 portal exercises per day
 - Concept validation and applied practice
- **Day 9–11**
 - Advanced exercises, model evaluation, and revision tasks
- **Day 12**
 - Final revision
 - **End-Semester Practical Examination**

1.3 Trainer's Role

- Deliver concepts module-wise as per the approved planner
- Guide students through daily portal-based exercises
- Monitor exercise completion and conceptual clarity
- Track student progress using daily evaluation logs

2. Course Delivery Details

2.1 Module-wise Delivery Focus

Each module emphasizes the following areas:

Time Series Forecasting

- Time series components: trend, seasonality, noise
- Stationarity testing (ADF)
- ACF and PACF analysis
- AR, MA, ARIMA, and SARIMA models
- Forecast accuracy and error analysis

Natural Language Processing (NLP)

- Text preprocessing: tokenization, stopword removal, lemmatization, stemming
- Feature extraction techniques
- Text classification (binary and multi-class)
- Model training and evaluation

Model Evaluation & Optimization

- Performance metrics: accuracy, precision, recall, F1-score

- Forecast error metrics
- Hyperparameter tuning and optimization

2.2 Continuous Assessment-Based Execution Plan

Assessment Model

This course follows a **fully Continuous Assessment Model**.

Assessment Component	Description
Daily Portal Exercises	Mandatory hands-on exercises aligned with daily topics
Internal Assessment – 1 (IA-1)	Evaluated from Day 1–5 portal exercises
Internal Assessment – 2 (IA-2)	Evaluated from Day 6–10 portal exercises
End-Semester Practical Exam	Comprehensive practical exam covering the entire planner

2.3 Learning Style

- Hands-on portal-based execution using Python
- Real-time problem-solving and debugging
- Trainer-led walkthroughs and demonstrations
- Daily practice reviews and structured doubt-clearing sessions

3. Execution Timeline

- **Start Date:** 27/01/2026
- **End Date:** 09/02/2026
- **Total Duration:** 12 Days

4. Review, Evaluation & Reporting

4.1 Evaluation Structure

A. Daily Continuous Assessment

- Completion of daily portal exercises
- Accuracy and correctness of implementations
- Ability to apply Time Series and NLP concepts independently
- Participation in discussions and Q&A

B. Overall Performance Evaluation

- **Internal Assessment – 1 (IA-1)**
- **Internal Assessment – 2 (IA-2)**
- **End-Semester Practical Examination**

4.2 Daily Evaluation Methods

- Portal exercise completion tracking
- Hands-on implementation review
- Trainer observations and remarks

Daily reports will be shared with the client.

5. Reporting & Documentation

5.1 Daily Reporting

Trainer will document:

- Exercises completed
- Key concepts covered
- Student participation and difficulties
- Support provided and clarifications

Daily reports will be shared with:

- Client representatives
- Academic coordinators

5.2 End-of-Course Deliverables

- Internal Assessment Summary (IA-1 & IA-2)
- End-Semester Practical Exam Report
- Course Completion Summary

Additional Administrative Notes

- Course execution is **exercise-driven and assessment-oriented**
- Daily portal exercises form the **primary evaluation mechanism**
- End-Semester Practical Exam will use **planner-wide, scenario-based questions**