

Week 3: ARIMA Models (Total video duration= 1.55 Hours. You will be required to spend around 15 minutes/day along with practicing datasets and quizzes)

Learning Outcomes from the Module:

After learning from this module, learners will be able to understand:



Auto-Regressive Models



Partial Auto-Correlation Function



Moving Average Models



Auto-Correlation Function



Python Implementation of (S)ARIMA model on a dataset



Mentor Session Duration:
2 hours

Faculty Name:
Dr. Abhinanda Sarkar

No. of videos:
1.55 hours

Video No.	Video Name	Duration of the video(mins)	Topics Covered	Conceptual or Hands On
1	Auto - Regressive(AR) Models	10:57	The concepts of Auto-Regression and the basics of stationarity is explained along with the need to stationarise the data.	Conceptual
2	How to Check for Stationarity?	06:07	The formal hypothesis test for stationarity (ADF test) along with the necessary hypothesis formulation	Conceptual
3	Stationarising a Series and Auto Regression	10:29	Taking appropriate measures to make a non-stationary series stationary and understanding the form of a Auto-Regressive model.	Conceptual
4	Partial Autocorrelation	07:22	The idea of Partial Autocorrelation and the methodology of choosing the order of the Auto-Regression by looking at the PACF plot	Conceptual
5	Moving Average(MA) Models	05:54	The idea of a moving average model and the concept of Auto-Correlation and ACF plots.	Conceptual
6	ARIMA Model	06:57	Understanding how ARIMA models are built with the appropriate stationary Time Series.	Conceptual

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7	Seasonal ARIMA Model	05:07	The concepts of Seasonal Auto Regressive Integrated Moving Average models and how to determine the various parameters of the SARIMA model.	Conceptual
8	Conclusion	06:50	Concluding the concepts of the (S)ARIMA models. Further study points (the hands-on part has been covered in the additional content of Week 3). Reference materials for studying the Time Series Analysis concepts	Conceptual
9	ARIMA Models - Hands on Python	33:23	Python Implementation of ARIMA models and compare, look at how the forecast looks like	Conceptual+Hands_On

Few textbooks that you can refer to:

1

Time Series Analysis

By James Hamilton

2

Introduction to Time Series and Forecasting

by Brockwell and Davis

