

Course Type	Course Code	Name of the Course	L	T	P	Credits
DE	NMCD507	Time Series Analysis	3	0	0	3

Course Objective

- The objective of the course will be to give idea to the students about Time Series Analysis.

Learning Outcomes

- This course will be useful for analysis of different time series data, modelling forecasting using the time series data.

Unit No.	Topics to be Covered	Contact Hours	Learning Outcome
1	Discrete parameter stochastic processes, strong and weak stationary, autocovariance and autocorrelation. Periodogram and correlogram analysis. Linear Time Series Models: Stationary and Non-Stationary Models, model identifications, parameter estimation and forecasting.	12	This unit will help students to understand fundamentals of Time Series Analysis, model identification.
2	Conditional Heteroscedastic models and their applications.	10	This unit will help students to understand the concept of Conditional Heteroscedastic time series models.
3	Multivariate Time Series Analysis and their Applications	10	This unit will help students to get the concept of Multivariate Time Series Analysis.
4	PCA and Factor Models and their applications	6	This unit will help students to get the concept of PCA and Factor Models.
5	Transfer Function models: identification, fitting and application	4	This unit will help students to get the concept of Transfer Function models building.
Total		42	

Text Books:

1. Time Series Analysis, Forecasting and Control by Box and Jenkins, Pearson Education

Reference Books:

1. Introduction to Time Series and Forecasting by P.J. Brockwell and R.A. Davis, Springer.
2. Analysis of Financial Time Series by Ruey S. Tsay