**Time Series Analysis and Applications**

1. **Characteristics of Time Series**

* Time series analysis: develop mathematic models that provide plausible descriptions for sample data
  + Considering time series as a sequence of random variables where x1 denotes the first time point and so on -> {}
* Time series statistical models
  + continuous time series v.s discrete time parameter series (equally spaced points in time)
  + degree of smoothness -> adjacent points in time are correlated, the value of the series at time t () depends in some way on the past values
* Measures of Dependence

Time domain approach

Frequency domain approach