STAT5210: Time Series Analysis

Lecture: Thursday R567

Instructor: Nan-Jung Hsu [njhsu@stat.nthu.edu.tw]

Textbook:

1. Shumway and Stoffer, Time Series Analysis and its Applications with R Examples. (2006) 2nd edition; (2011) 3rd edition.
2. Tsay, Ruey S. (2012), An Introduction to Analysis of Financial Data with R.
3. Tsay, Ruey S. (2014), Multivariate Time Series Analysis.

Grading: Homework (60%), Project (30%), Class Participation (10%)

Course Materials: http://lms.nthu.edu.tw

Office Hours: TBA

Topics:

Time series data patterns and dependence

Stationary process and autocorrelation

Linear process, ARMA models

Estimation and best linear prediction (forecasting)

Model building and selection

Volatility model for return data

State-space model and Kalman filter

Multivariate time series

Frequency domain analysis: spectral density and its inference

Software:

R: http://www.r-project.org

RStudio: http://rstudio.org/