

STAT-812 Financial Econometrics (3 Credit Hours)

1. Objectives

This course aims to introduce students to the financial models with a special focus on stochastic and time series-based methods.

2. Course Contents

Stochastic Processes and Financial time Series, Shock Persistence and impulse response analysis, Estimating Capital Asset Pricing Models (CAPM), Modeling of equity returns, trading day effects, and volatility estimations. Besides, recent advancements in financial time series including the unit root phenomenon, co-integration, Autoregressive Conditional Heteroscedasticity (ARCH) and Generalized Autoregressive Conditional Heteroscedasticity (GARCH), stochastic volatility modeling, trend break analysis and nonlinearity will be covered in Measure of Stock Market Integration. Related applications/computations with R.

3. Recommended Books

- i. Chatfield, C., The Analysis of Time Series, 5th Edition Chapman and Hall, New York (2016).
- ii. Mills, T.C., The Econometric Modeling of Financial Time Series, Cambridge University Cambridge (2000).
- iii. Campbell, J. Y., Lo, A. W. and Mackinlay, A. C., The Econometrics of Financial Markets. Princeton University Press (2012).
- iv. James D. H., Time Series Analysis, Princeton University Press (1994).

4. Outcomes

On successful completion of this course, students will be able to handle the financial econometric data, its fitting and estimation through the advanced stochastic processes and financial time series. Moreover, students will be able to model the CAMP, ARCH and GARCH.