



Course Code Master 2

Course Title: Time Series

Day(s), Time, Place 11-16 June 2018 - Ho Chi Minh City



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All the materials in this syllabus can be downloaded at
<http://www.tuanluong.com/teaching-materials.html>

Course Description: The course studies quantitative techniques for the analysis and the forecasting of time series. Stationary models are considered as well as processes. A particular attention is paid on linear forecasting (MA, AR, ARMA models). The grade for the course will be based on a final exam without any additional document.

Prerequisite(s): Linear algebra; Probability; Statistics; Elementary Econometrics.

Textbook: Time Series Analysis by James Hamilton.

Note(s): A minimum grade of 10 is required in this course to pass.

Credit Hours: 20

Course Objectives:

At the completion of this course, students will know:

1. Ordinary Least Square revision
2. First order Difference equations
3. Lag Operators
4. Stationary and Ergodic processes
5. Moving Average (MA) processes
6. Autoregressive (AR) Processes
7. Mixed autoregressive average (ARMA) processes
8. Autocovariance generating function
9. Complex number
10. Population spectrum
11. Filters
12. Invertibility
13. Forecasting principles
14. Loss function in forecasting
15. Linear projection
16. Optimal forecast

Grade Distribution:

Final Exam 100%

Course Policies:

- **General**

- No private talking or any disturbing activities.
- Computers are not to be used unless instructed to do so.
- Quizzes and exams are closed book, closed notes.
- **No makeup quizzes or exams will be given.**

- **Grades**

- Grades in the **C** range represent performance that **meets expectations**; Grades in the **B** range represent performance that is **substantially better** than the expectations; Grades in the **A** range represent work that is **excellent**.

- **Attendance and Absences**

- Attendance is expected and will be taken each class.
- Students are responsible for all missed work, regardless of the reason for absence. It is also the absentee's responsibility to get all missing notes or materials.

Tentative Course Outline:

The coverage might change as it depends on the progress of the class. However, you must keep up with the reading assignments.

Session	Content
Session 1	<ul style="list-style-type: none">• Linear regression models.• Tutorial• Quiz and Game
Session 2	<ul style="list-style-type: none">• Lecture: Difference equations - Lag operators.• Tutorial• Quiz and Game
Session 3	<ul style="list-style-type: none">• Stationary processes - Moving average processes.• Tutorial• Quiz and Game
Session 4	<ul style="list-style-type: none">• Autoregressive processes - ARMA processes.• Tutorial• Quiz and Game
Session 5	<ul style="list-style-type: none">• Midterm• Feedback
Session 6	<ul style="list-style-type: none">• Forecasting: Principles of forecasting; forecasting rules• Tutorial• Quiz and Game
Session 7	<ul style="list-style-type: none">• Forecasting applications• Tutorial• Quiz and Game