<u>Math 4425 Introductory Time Series</u>

Syllabus – Spring 2023-2024

Course Home Page

http://www.math.ust.hk/~maling/

Instructor

Prof Shiqing Ling
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Office Hour: Tu., 4 to 6 pm.

Teaching Assistants

KAZOVSKAIA Anastasiia
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Office Hour: Wed, 4 to 6 pm

Meeting Time and Venue

TuTh 10:30AM - 11:50AM/Rm 2610, Lift 31-32 (26)

Course Description

Duration: one semester. Credits: 3 units.
Prerequisites: MATH 3423 and MATH 3424

Key topics: ACF, PACF, AR model, ARMA model, ARIMA model, seasonal time series models, estimation, diagnostic checking of models.

Assessment Scheme

<u>Assessment</u>	<u>Assessing Course ILOs</u>
Homework: 15 %.	1,2
Midterm Exams: 15 %.	1
Final Exam: 50 %.	1,2
project 20%,	

Student Learning Resources

Lecture Notes:

Lecture notes (All exams and homework problems will be based on the contents covered in lectures.)

Textbooks/ References:

1. .William W. S. Wei (2006): *Time Series Analysis: Univariate and Mltivariate Methods*, Addison-Wesley.

2. Taylor Stephen (1986): *Modelling Financial Time Series* John Wiley&Sons

3. Walter Enders (1995): Applied Econometric Time Series *John Wiley&Sons.*

Teaching Approach

Lectures: focus on illustrating the concepts and methodologies of the course content.

Tutorials: focus on examples and problem solving skills.

Intended Learning Outcomes

Upon successful completion of this course, students should be able to understand:

1. The features of time series model
2. How to fit a model by using the techniques in this course.

Course Schedule

Week	Content	Remarks
1	Overview and Fundamental Concepts	
2-5	Stationary time series models	
6	Forecasting	
7	Model identification	
8-9	Parameter estimation, diagnostic checking and model selection	
10	Seasonal time series models	
11-13	Multivariate AR model	