

University of Toronto

TIME SERIES ANALYSIS STA457

COURSE OUTLINE (2020 Winter, January-April)

Instructor: Jen-Wen Lin, PhD, CFA

Office Hours: 30-minute before class, after class, By appointment

Class Time/Place: Tuesday 0600-0900 pm / MS3154

Email: jenwen@utstat.toronto.edu

Teaching assistants: TBA

- Please check announcements on Quercus regularly for any updates on Course Outline

COURSE DESCRIPTION

This course introduces several practical techniques for time series analysis. Topics in this course include conventional time series models, such as Box-Jenkins methods (ARIMA models), multivariate time series analysis (transfer function model, Vector autoregression, co-integration), and machine learning techniques in time series analysis. These techniques can be applied to different disciplines, such as economics and finance. After this course, students are expected to gain hands-on knowledge on how to analyze and model time series data using different techniques.

TA OFFICE HOURS

To be announced.

WEIGHTING SCHEME

Marking Scheme (tentative):

40% x midterm-test (x2) + 10% individual assignment + 10% team assignment + 40% x Final

- If students miss the first midterm test (Feb 04), its weight will be shifted to the final exam.
- The team assignment should include a team of five students.
- Please read and obey academic integrity at University of Toronto (www.artsci.utoronto.ca/osai/students), or see page 2 of Course Outline

TOPICS AND SCHEDULE

Tentative schedule			
Session	Date (Thursday)	Content	Note
1	Jan-07-2020	Lecture 1 (Introduction)	
2	Jan-14-2020	Lecture 2	
3	Jan-21-2020	Lecture 3	
4	Jan-28-2020	Lecture 4 & review test1	
5	Feb-04-2020	Test1 (15 %)	test1
6	Feb-11-2020	Lecture 5 & Assignment/project	
7	Feb-18-2020	Reading week	
8	Feb-25-2020	Lecture 6	Submit assignment
9	Mar-03-2020	Lecture 7	
10	Mar-10-2020	Lecture 8 & Presentation 1	Submit report
11	Mar-17-2020	Presentation 2 & review test2	
12	Mar-24-2020	Test2 (25%)	test2
13	Mar-31-2020	presentation 3	test2 makeup?

TEXTBOOK (OPTIONAL)

Wei (2005), Time Series Analysis—Univariate and Multivariate Methods.

<https://search.library.utoronto.ca/details?5587975&uuid=be2c9580-3b87-4133-897a-04dac9884666>

ACADEMIC INTEGRITY

All students, faculty and staff are expected to follow the University's guidelines and policies on academic integrity. For students, this means following the standards of academic honesty when writing assignments, collaborating with fellow students, and writing tests and exams. Ensure that the work you submit for grading represents your own honest efforts. Plagiarism—representing someone else's work as your own or submitting work that you have previously submitted for marks in another class or program—is a serious offence that can result in sanctions. Speak to me or your TA for advice on anything that you find unclear. To learn more about how to cite and use source material appropriately and for other writing support, see the U of T writing support website at <http://www.writing.utoronto.ca>. Consult the Code of Behaviour on Academic Matters for a complete outline of the University's policy and expectations. For more information, please see <http://www.artsci.utoronto.ca/osai> and <http://academicintegrity.utoronto.ca>.