上海交通大學
SHANGHAI JIAO TONG UNIVERSITY

Shanghai Jiao Tong University

EC26033 Statistical Learning in Finance

Instructor:	TBD	**Email:**	TBD
Instructor's Home Institution:	TBD	**Office:**	TBD
Office Hours:	TBD		
Term:	December 16, 2019-January 7, 2020	**Credits:**	4 units
Classroom:	TBD	**Teaching Assistant(s):**	TBD
Class Hours:	Monday through Friday, 160 mins per teaching day		
Discussion Sessions:	2 hours each week, conducted by teaching assistant(s)		
Total Contact Hours:	64 contact hours (1 contact hour = 45 mins, 2880 mins in total)		
Required Texts:	**Background of probability theory**: J.S Rosenthal, A First Look at Rigorous Probability Theory. **The Maximum likelihood and the expectation** maximization: Friedman, Jerome, Trevor Hastle, and Robert Tibshirani. *The elements of statistical learning*. Vol.1. **Monte Carlo sampling**: Owen, Art B., Monte Carlo theory, methods and examples. **Markov chain Monte Carlo**: Liu, Jun S. *Monte Carlo strategies in scientific computing*.		
Prerequisite:			

Course Overview

On completion of this unit students will be able to:

1. Develop specialised statistical knowledge and skills within the field of statistical learning.

2. Understand the complex connections between specialised financial and mathematical concepts.

3. Apply critical thinking to problems in statistical learning that relate to financial models.

4. Apply estimation and calibration solving skills within the finance context.

5. Formulate expert solutions to practical financial problems using specialised cognitive and technical skills within the fields of statistical learning.

6. Communicate complex information in an accessible format to a non-mathematical audience.

Grading Scale is as follows:

Number grade	Letter grade	GPA
90-100	A	4
85-89	A-	3.7
80-84	B+	3.3
75-79	B	3
70-74	B-	2.7
67-69	C+	2.3
65-66	C	2
62-64	C-	1.7
60-61	D	1
≤59	F (Failure)	0

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Class Schedule (Subject to Change)

Date	Lectures	Laboratory 10%	Assignments 30%
Day 1	L1-L3	(NO CLASS)	
Day 2	L4-L6	Lab 1	Assignment 1 released
Day 3	L7-L9	Lab 2	
Day 4	L10-L12	Lab 3	
Day 5	L13-L15	Lab 4	Assignment 1 DUE, Assignment 2 released
Day 6	L16-L18	Lab 5	
Day 7	L19-L21	Lab 6	
Day 8	Midterm		
Day 9	L22-L23	Lab 7	Assignment 2 DUE, Assignment 3 released
Day 10	L24-L26	Lab 8	
Day 11	L27-L29	Lab 9	
Day 12	L30-L32	Lab 10	Assignment 3 DUE
Day 13	L33-L34	Lab 11	
Day 14	Review		
Day 15	Final		