

# IE 522 – Statistical Methods in Finance

All times are Champaign times (US Central Time)

Professor	Liming Feng
Contact Info	<a href="mailto:fenglm@illinois.edu">fenglm@illinois.edu</a>
Course sites	<a href="https://canvas.illinois.edu">https://canvas.illinois.edu</a> <a href="https://www.gradescope.com/">https://www.gradescope.com/</a>
Prerequisites	Probability
Teaching assistant	Hao Qin, <a href="mailto:haoqin3@illinois.edu">haoqin3@illinois.edu</a> , office hours: TBA

## Course description

This course covers statistical tools that are fundamental for financial modeling, analyzing financial data and further studies in financial engineering. The course consists of statistical inference, regression, time series analysis and other selected topics.

## Learning outcomes

At the end of the course, students will be able to use the statistical tools covered in this class to analyze financial data using a statistical programming language such as R.

## Course materials

- Lecture notes: available on <https://canvas.illinois.edu>
- References (**e**: available electronically from <http://www.library.illinois.edu>)
  - Statistical Inference, 2<sup>nd</sup> Edition, 2002, George Casella and Roger L. Berger
  - Statistics and Data Analysis for Financial Engineering, 2<sup>nd</sup> Edition, 2015, David Ruppert and David Matteson **e**
  - Analysis of Financial Time Series, 3<sup>rd</sup> Edition, 2010, Tsay **e**
  - An Introduction to Statistical Learning, 2013, James, Witten, Hastie and Tibshirani **e**
  - Books on R **e**

## Policies

- Attendance – 5 points
- Homework – 48 points. Thirteen homework assignments. The lowest score will be dropped
- Test 1 – 15 points, Test 2 – 20 points
- Group project – 12 points (two students per team; find your own teammate)
- Make sure you submit assignments earlier to avoid last minute technical difficulties
- All homework assignments must be finished individually. Those who violate will be penalized. You should never share your work with others. For UIUC student code of conduct, see <https://studentcode.illinois.edu/>. Please contact the instructor or TA if you need help on homework assignments
- Requests for correction of possible grading errors must be submitted within one week after the work is returned. **No corrections possible afterwards**
- Exams are open notes (you are allowed to use lecture notes, homework and homework solutions); makeup exams are possible only under emergencies (official proof of the emergency and approval of the instructor are required **prior to the exam**)
- Check your email daily. Please make sure your email address in the system is correct

## Schedule (tentative)

Monday	Tuesday Feng 9:30am-10:50am	Wednesday	Thursday Feng 9:30am-10:50am	Friday TA Office Hour TBA
	Aug 22 L1		Aug 24 L2	
	Aug 29 L3		Aug 31 L4	
Labor Day	Sept 5 L5		Sept 7 L6	
	Sept 12 L7		Sept 14 L8	
	Sept 19 L9		Sept 21 L10	
	Sept 26 L11		Sept 28 L12	
	Oct 3 L13		Oct 5 L14	
	Oct 10 L15 Test 1		Oct 12 L16	
	Oct 17 L17		Oct 19 L18	
	Oct 24 L19		Oct 26 L20	
	Oct 31 L21		Nov 2 L22	
	Nov 7 L23		Nov 9 L24	
	Nov 14 L25		Nov 16 L26	
Thanksgiving Break				
	Nov 28 L27		Nov 30 L28	
	Dec 5 L29		Dec 8 Test 2	