

# Olin Business School

## FINANCE 500Q - Spring 2020

Section 1: Mondays 6:15pm-9:15pm, SH 105  
Section 2 Wednesdays 6:15pm-9:15pm, SH 105  
Section 3: Wednesdays 11:30am-2:20 pm, SH 112

## Quantitative Risk Management

**INSTRUCTOR: Hong Liu**

### CONTACT

**INFORMATION:** Hong Liu: (314)-935-5883 email: [liuh@wustl.edu](mailto:liuh@wustl.edu),  
209 Simon Hall

**OFFICE HOURS: Open Door Policy**  
**Mondays and Wednesdays 5pm –6pm guaranteed.**

**TA:** Renping Li, Office Hours: Tuesdays 5pm-6pm, Office SH 290H,  
[renpingli@wustl.edu](mailto:renpingli@wustl.edu)

**HELP SESSIONS:** Fridays 4pm-5:20pm, SH 112.

**TEXT: Optional.**

1. “Risk Management and Financial Institutions” (Prentice Hall) by John Hull
  2. “Value at Risk” (McGraw Hill) by Philippe Jorion
- One copy of each of the above books is on reserve in the Business Library.

### Olin’s Pillars of Excellence:

Olin students will:

1. **Embody a values-based and data-driven ethos in their approach to all business situations**
2. Understand the global opportunities and challenges facing businesses
3. Engage with business issues through the application of experiential knowledge, in addition to the rigorous technical skills acquired in the classroom
4. Pursue world-changing initiatives with an entrepreneurial and innovative mindset and skillset

### Honor Code and Code of Conduct

This course will be conducted according to the standards specified in the Code of Conduct and Code of Academic Integrity, which were presented to the faculty and the students of the Olin

Business School. You are expected to be familiar with these codes. For your reference some relevant parts of the code are attached at the end of this syllabus.

**COURSE DESCRIPTION:** The course is designed to provide students with a framework for evaluating financial risks and managing them with the use of derivatives. It is an introduction to measuring, analyzing and hedging market risk, credit risk, and liquidity risk. Testing VaR models will also be covered.

## **GRADING**

Your grade will be determined using the following components:

Homework	40%
Final Exam	50%
Class Participation	10%

**No earlier or later exam will be given.** The only exception is medical emergency that results in going to an emergency room in a hospital. Make sure you plan ahead to attend the exam.

**Homework** : Homework will be assigned every week on Thursdays and due next Thursday. The number of problems in each homework depend on the pace of the classes. As long as it is deemed that you have made a good faith attempt at solving a part of a problem, the full points will be awarded for the part. Solutions to homework will be posted after the homework is due.

Your total points that count toward your final grade are equal to the sum of points you get from all the homework divided by the total full points in the homework times 40. For example, if there are 250 total points in the homework and you get 200, then you have  $200/250 \times 40 = 32$  points toward your grade. Note that different homework may have different total points.

Homework must be individual effort. Mutual help and discussions on course materials (including homework) among students are encouraged, but providing almost complete solution of any homework problem to others is strictly prohibited and will be treated as cheating.

**Late homework will Not be accepted without advance notice to justify the delay.**

**Final Exam:** open-book, open-notes, two-hour exam.

**Class participation:** Students must attend each class except for sickness or other emergencies. In these cases, students are asked to inform the instructor in advance if possible. Students must be prepared to answer questions in class. Cold-calling will be enforced. The credits for class participation are given based on attendance and

preparedness.

## **CODE OF CONDUCT**

The purpose of Olin's Code of Conduct is to clarify expectations about academic and professional behavior. The Code is meant to encourage and clarify appropriate academic, classroom, interpersonal, and extra-curricular etiquette that is expected of each individual by their peers, the faculty and the institution. It is also intended to help describe the overall environment of excellence and professionalism that members of the Olin community seek to establish and to continually enhance. It is the responsibility of each member of the Olin community to uphold the spirit, as well as the principles, of the Code.

Please refer to the publication *Integrity Matters: Olin Business School Code of Conduct* for specific responsibilities, guidelines and procedures regarding academic integrity.

### ***Olin's Code of Conduct as it relates to Academic Matters***

The following is a summary of the Code as it applies to Academic matters:

**Student Academic Violations.** *It is dishonest and a violation of student academic integrity if you:*

1. **Plagiarize** – You commit plagiarism by taking someone else's ideas, words or other types of product and presenting them as your own. You can avoid plagiarism by using proper methods of documentation and acknowledgement.
2. **Cheat on an examination** – You must not receive or provide any unauthorized assistance on an examination. During an examination you may use only material authorized by the faculty.
3. **Copy or collaborate on assignments without permission** – It is dishonest to collaborate with others when completing graded assignments or tests, performing laboratory experiments, writing and/or documenting computer programs, writing papers or reports and completing problem sets (unless expressly discussed in class).
4. **Fabricate or falsify data or records** – It is dishonest to fabricate or falsify data in laboratory experiments, research papers, reports or other circumstances; fabricate source material in a bibliography or "works cited" list; or provide false information on a resume or other document in connection with academic efforts. It is also dishonest to take data developed by someone else and present them as your own.
5. **Engage in other forms of deceit or dishonesty that violate the spirit of the Code.**

If you have any questions regarding the definition of allowable behavior, it is your responsibility to ask for clarification prior to engaging in the collaboration.

### ***Olin's Code of Conduct as it relates to Professional Behavior***

Expectations – Professional Standards of Conduct

Olin students are expected to conduct themselves at all times in a professional manner. Professional behavior includes, but is not limited to, the following:

#### **In the classroom:**

- **Attendance:** Students are expected to attend each class session. Students who must miss a session for any reason should make every effort to notify the instructor prior to the class meeting. Students should never register for courses scheduled in conflict with one another.
- **Punctuality:** Students are expected to arrive and be seated prior to the start of each class

session. They should display their name cards in all classes at all times.

- **Behavior:** Classroom interaction will be conducted in a spirited manner but always while displaying professional courtesy and personal respect.
- **Preparation:** Students are expected to complete the readings, case preparations and other assignments prior to each class session and be prepared to actively participate in class discussion.
- **Distractions:**
  - *Exiting and Entering:* Students are expected to remain in the classroom for the duration of the class session unless an urgent need arises or prior arrangements have been made with the professor.
  - *Laptop, PDA, and Other Electronic Device Usage:* Students are expected to not use laptops, PDAs, and other electronic devices in classrooms unless with the instructor's consent and for activities directly related to the class session. Accessing email or the Internet during class is not permitted as they can be distracting for peers and faculty.
  - *Cellular Phone and Pager Usage:* Students are expected to keep their mobile phones and pagers turned off or have them set on silent/vibrate during class. Answering phones or pagers while class is in session is not permitted.
  - *Other distractions:* Those identified by individual instructors, such as eating in the classroom.

## **DISABILITIES**

Reasonable accommodations will be made for students with verifiable disabilities. Students who qualify for accommodations must register through Washington University's Center for Advanced Learning Disability Resources (DR) in Cornerstone. Their staff members will assist me in arranging appropriate accommodations.

## **TENTATIVE COURSE SCHEDULE**

DATE	TOPICS
Week 1	Introduction
Week 2 (no class on Jan 20)	Volatility, Correlations, and Copulas
Week 3	Value at Risk
Week 4	RM using Forwards, Futures and Options
Week 5	Dynamic RM Strategies
Week 6 Last class of Mini A February 24	Interest Rate Risk Management

	<b>Spring Break</b>
Week 7 (Mini B Starts on March 16)	Credit Risk (I)
Week 8	Credit Risk (II)
April 1 6:15pm-9:15pm All sections Emerson Auditorium	<b>Guest Lecture 1</b>  <b>MICHAEL W. GRISWOLD, CFA</b> <b>Abhishek M Rane</b>  <b>Risk Management and Asset Allocation</b> <b>Ascension Investment Management</b>
April 8 6:15pm-9:15pm All sections Emerson Auditorium	<b>Guest Lecture 2</b>  <b>Maxwell M. Zhu</b>  <b>Managing Director, Head of Quantitative Analysis &amp; Strategies</b> <b>BMO Harris Bank</b>
April 15 6:15pm-9:15pm All sections Emerson Auditorium	<b>Guest Lecture 3</b>  <b>Fran Olszweski</b>  <b>Chief Investment Officer</b> <b>Eclipse Capital</b>
Week 12	Liquidity Risk
April 27	6:30pm-8:30pm, SH 105 and SH 110 <b>FINAL EXAM</b>