Seattle University

FINC 5330: Fixed Income Analysis
Spring Quarter 2019

Lecture Time: Tuesday: 6:00pm-8:40pm
Lecture Room: Pigott 109
Course Webpage: See Canvas

Instructor: Shengyu Zhang, Ph.D., CFA, FRM
Phone: 206-200-7344 (cell)
E-mail: syzhang0401@gmail.com

Office Hours: Tuesday 5:15pm-6:00pm
Office Room: Pigott 516

Course Description:

This course is designed to provide the students with an understanding of modeling, valuation and risk management in fixed income markets. It presents the conceptual frameworks for fixed income analytics with real world practical application. Upon successful completion, students will have a basic understanding of fixed income markets, data and analytics, and be able to apply this knowledge to fixed income security valuation and pricing, risk measurement and management.

A basic understanding of undergraduate calculus, probability and statistics are required. The prerequisite to this class is FINC 5100 “Investments” and Finc 5105 “Valuation of derivatives”. The course involves a mix of lectures, homework and computer exercises. No specific computing language is required, but student must know how to use Excel.

Topics covered will include:

- Basics of fixed income analysis
  Cash flows, time value and discount factors, bond price, zero coupon rate, par coupon rate, forward rate

- Fixed income securities
  Pure discount bonds, coupon bond, callable bonds, Treasury bonds, Mortgage backed securities

- Interest rate derivatives
  Forward contract, future contract, interest rate swap, swaption, cap and floor

- Risk measurement tools of fixed income securities
  Duration, convexity, key rate duration, yield curve shock, scenario analysis, hedging

Course schedule (tentative):
- Lecture 1: Cash flow, discount factor and yield curve – 04/02/2019
- Lecture 2: Discount bonds, coupon bonds and floating rate bonds – 04/09/2019
Textbooks (required):
The following textbooks are required.


Grade Evaluation:
The course grade is given below:

<table>
<thead>
<tr>
<th>Course Component</th>
<th>Weight</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>Homework</td>
<td>50%</td>
<td>Posted on Canvas</td>
</tr>
<tr>
<td>Midterm</td>
<td>20%</td>
<td>Posted on Canvas</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30%</td>
<td>Posted on Canvas</td>
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Exams:
Both midterm and final exams are in-class open-book and open-notes. Calculator is allowed.

Homework:

- The students will form the groups with two students in a group to finish the homework. You are encouraged to discuss the homework with other students. However, please write your own homework solutions and please do not share your homework solutions with other groups.

- Homework due date will be announced at each homework assignment and are typically due by the beginning of the next lecture time. No late homework is accepted.

- Homework should be submitted via the folder accessible through the course site or handed to me by the posted deadline. You should submit a write up of your work, including relevant derivations and descriptions. If there is a computational component in Excel format, you should submit your Excel workbook separately. If you are scanning written work, combine all the scans into a single document and save as a PDF. All turned in work must be written in a legible and well organized manner. Instructor reserves the right not to give any credit for the problems that are not readable.

- Show your work except when the assignment states otherwise.