GSM633 CREDIT RISK AND FIXED INCOME

Monday/Wednesday 10:00 a.m. - 11:30 a.m. Classroom: Mudd 302
Atkinson Graduate School of Management, Fall 2008
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Office: Mudd 313, Phone: 503-370-6227
Office Hours: Mon & Wed 3pm -4pm or by appointment

Course Overview and Objectives:

This course focuses on credit risk, credit analysis, and fluctuations in interest rates, and the ways they combine to determine the profitability of lending and investing in various forms of debt. Debt is everywhere: governments, corporations, and households borrow large amounts of money from institutional investors such as commercial banks, investment banks, insurance companies, pension funds, and mutual funds. We will study how debt markets operate, how debt is valued, how interest rates are determined, and how to analyze the credit risk of borrowers. We will then apply our learning to the current credit turmoil and its implications for the private and public sectors of the economy.

One third of the course will be devoted to credit risk and credit analysis. This section of the course will cover credit ratings, traditional credit analysis, default likelihood, loss given default, and credit risk models. We then focus on how to manage credit risk in bank loan and bond markets. The other two third of the course will be devoted to debt securities. Emphasis is placed on the factors that determine bond yields: factors such as the coupon and maturity structure, liquidity, credit risk, and tax status of the security, and on measures of return and risk, statistics such as the yield to maturity, duration, and convexity. Moreover, as a special topic, this course will have a lecture on microlending -- making tiny loans that help the entrepreneurial-minded poor lift themselves up from the lowest rungs of poverty.

All concepts in this course are explained through hands-on applications, examples, and real-world cases with less focus on the advanced mathematics. The course will be conducted through lectures, class discussion of cases, problem sets, and occasional meetings with members of the banking community. The quantitative and analytical skills accumulated in this class will certainly be rewarding in your future career.

Required Course Materials:

Textbooks *Fixed-Income Securities: Tools for Today's Markets,* Second Edition, by Bruce Tuckman, Wiley. This is a good book for your learning and reference. I recommend getting the paperback "University Edition" which includes problems at the end of the chapters. Many assigned homework questions will come from this book.

Cases are a selective collection of real-world examples of applying fixed income securities in risk management and financial engineering. Cases are published by Harvard Business Publishing and ECCH and should be available at our bookstore.

Lecture Notes and Handouts are the primary resource for the class and they will be posted on **Class Tools** before each lecture.

Calculators are needed for completing assignments and in-class practice use. The calculator must be able to handle the power function y^x, the exponential function e^x, and the natural logarithm function $LN(x)$. If your laptop computer has Excel installed, you can use the Excel build-in functions instead. You may also use the Windows XP build-in calculator and in this case, you need to switch to the scientific view in order to use those functions.

Class Tools website is used for this course on which documents will be posted as needed. http://agsm.willamette.edu/classtools/mba/

All announcements, assignments, changes, etc. are posted there. The student is responsible for remaining up to date at all times.

Please let me know if you have a special interest in any particular topic and would like me to recommend additional optional readings.

Preparation:

All of the material is understandable with little mathematics beyond algebra. This does not imply that the course is "easy," but rather that the course is accessible to any student who understands algebra and a little calculus. The lectures will be illustrated with simple numerical examples and, following the textbook, calculus will be avoided whenever possible. You are expected to use Excel or scientific calculators to finish the homework questions.

Homework:

Homework problems will be assigned every two weeks starting with the 2nd lecture of the first week and will be reviewed in class upon request. Late return of assignments (passing the due time) will receive a maximum score of 80. Homework will be delivered and returned via Class Tools as Excel or Word documents. Assignments are located under 'Hand Outs' and returned homework should be uploaded to a corresponding folder under 'Hand Ins'. Files should be exactly named as HomeworkNumber_LastName_FirstName. For example, if I need to turn in Homework1, I would name my file as Homework1_Wu_Wei.

Homework will be graded on meeting due dates, completeness and accuracy. Analytical justifications and procedures must be provided to receive any points for each question. I am much more concerned with seeing your logic of analysis rather than a perfect book solution. Your work will be returned via Class Tools' 'Hand Back' function and your grade will be in the document title. Note that all homework assignments will count towards your final grade.

Case Assignment:

Case study has been proven to be an effective learning tool and will be used in this course. Each topic will typically have a companion case (see course schedule at the end of the

syllabus). You need to carefully read the assigned case and write a report based on a provided list of questions. The report has to be written in a continuous narrative manner. Page and font requirements: minimum 2 pages, Times New Roman, font size 12, 1.5 spacing, and 1 inch margin on each side. Since there this course does not have any exams, case assignments receive an important weight towards your final grade. You are welcome to follow the format of case analysis write-up in Atkinson. However, format variations are fine if you have your own writing style and you confidently think it is better. Grading is based on 'Case Writing Guideline and Grading Criteria' (a separate file). The one case assignment that receives the lowest score will be dropped at the end of the semester. As a result, 6 assignments will enter the calculation of your final grade.

Project:

There is one individual project that must be presented in front of the class towards the end of the semester (perhaps the final week). I will suggest a list of topics for you to choose from. However, one can choose any topic in the field of credit risk and fixed income. The presentation will be graded on 1) ease of understanding; 2) subject knowledge; 3) organization; 4) graphics and contents.

Each student will have 15 minutes to present his/her work.

Class Participation:

All questions and comments are encouraged. After answering a question, students may write down his or her name on the "Class Participation" sheet during each lecture. I will collect the sheets at the end of each lecture and count students' names for participation points. Readings from the textbook, cases, and possibly other sources will be assigned each week. You should be prepared to respond to questions in class about the readings. I will randomly ask you questions.

Attendance:

Please be in class on time. You are responsible for everything that is said in class, which may include material not covered in the readings, modifications to the syllabus, and announcements concerning change of schedule. You will lose your attendance points for missing classes without a legitimate excuse.

Grading Policy:

Homework- 30%; Case Assignments- 30%; Project- 30%; Class Participation-5%; Attendance- 5%.

For all purposes, and unless notified otherwise, the grading scale is

A: 95 - 100

A-: 88 - 94

B+: 79 - 87

B: 71 - 78

B-: 63 - 70

C: 54 - 62

F: 53 and below.

There will be no makeups and any late submission of homework and case assignment will receive a maximum score of **80** unless a valid doctor's excuse is provided.

Notice to Students with Disabilities:

Any student eligible for and requesting academic accommodations due to a disability should provide documentation to Disability Services located in the Bishop Wellness Center within the first two weeks of the semester.

Collaboration and Individual Work:

Students are encouraged to collaborate throughout the course. The goal of homework and case assignments is to give you practice in mastering the course material. Consequently, you are encouraged to work together. However, at the conclusion of any collaborative work, the final calculations, tables, charts, explanations, and most importantly writing of each assignment have to be **individual** work. All students are expected to follow the *Atkinson Graduate School of Management Handbook*.

Data, Citation, and Reference:

You must use accurate information gathered from reliable sources. All information, whether ideas, text, data, analysis, or opinion, must be attributed to its sources. Do not use sources which you do not cite, acknowledge, and attribute in your work.

Course Schedule:

Topics in Credit Risk:

Aug 25: Introduction and Course Overview. Why a sound understanding of credit risk and fixed income securities is important? Lessons from subprime crisis.

Readings for next lecture: Handout

Aug 27: Credit Analysis, Credit Ratings, Altman's Z-score, Recovery Rates (Loss Given Default).

Case Assignment #1

Sep 1: No Class Scheduled, Labor Day Holiday

Sep 3: Case Study and Discussion #1, 'Private Capital and Public Policy: Standard & Poor's Sovereign Credit Ratings'.

Readings for next lecture: Handout

Sep 8: Transferring credit risk and debt securitization: Credit Default Swaps (CDS), Collateralized Debt Obligations (CDO).

Case Assignment #2

Sep 10: Case Study and Discussion #2, 'The US Housing Market and the Subprime Mortgage Crisis'.

Sep 15: Using equity prices to estimate default likelihood.

Homework Assignment #1
Readings for next lecture: Handout

Sep 17: Microfinance.

Readings for next lecture: Tuckman Ch1

Topics in Fixed Income Securities:

Sep 24: An overview of debt security markets, players and institutions.

Case Assignment #3

Sep 29: Case Study and Discussion #3, 'BondsinAsia: Trading Bonds on a Global Franchised e-Platform'.

Homework Assignment #2
Readings for next lecture: Tuckman Ch 2, 3

Oct 1, Oct 6, Oct 8: The basic analytical concepts behind bond prices: spot rates, forward rates, yield to maturity.

Homework Assignment #3
Readings for next lecture: Tuckman Ch 4.

Oct 13, 15: Yield curve analysis.

Homework Assignment #3
Case Assignment #4

Oct 20: Case Study and Discussion #4: 'Arbitrage in the Government Bond Market?'

Readings for next lecture: Tuckman Ch5, 6

Oct 22, 27, 29: Duration and Convexity

Homework Assignment #4
Case Assignment #5

Nov 3: Case Study and Discussion #5, 'Walt Disney Company's Sleeping Beauty Bonds – Duration Analysis'.

Readings for next lecture: Tuckman Ch 7, 8

Nov 5: Portfolio Management: Hedging

Case Assignment #6

Nov 10: *Guest Speaker*- Ernesto Toskovic, Senior Underwriting Officer at Key Bank - Commercial Banking, Greater Oregon.

Topic: Credit Analysis, Underwriting, Syndicating, and Monitoring Bank Loans.

Nov 12: Case Study and Discussion #6, 'Union Carbide Corp.: Interest Rate Risk Management'.

Readings for next lecture: Tuckman Ch9, 10

Nov 17, 19, 24: Term Structure Modeling: binomial models, risk neutral pricing, shape of the term structure.

Case Assignment #7

Nov 26: No class scheduled. Happy Thanksgiving!

Dec 1: Case Study and Discussion #7, 'Deutsche Bank: Finding Relative Value Trades'.

Dec 3: Presentation #1

Dec 8: Presentation #2 (Tentative)