Course Syllabus
Fixed Income Securities, Undergraduate 4218, Graduate 7218
Spring 2023

Class Times and Locations

TU/TH 4:30 PM, Gerlach Hall, Room 365
Bloomberg Lab Mason 147
Final Exam: 4:30-6 PM. Tuesday, February 28, 2023

Course Credits

1.5 Units

Instructor: Jim Sexton
Office: Virtual meetings with agreed time and date.
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Course Description and Expectations

Fixed Income Securities (BUSFIN 4218, 7218) will provide students with an introduction to the mathematics and evaluation of US Dollar denominated fixed income instruments. Students will learn the underlying terms and conditions used in the fixed income markets and apply Excel based mathematical models to evaluate the pricing, yield, and risk attributes in the market. Bloomberg, which is a powerful Fixed Income system, will also be used. The course will introduce students to the discount rates and models used by practitioners and will cover:

1. US Treasury securities including: discount bills, zero coupon strips, nominal coupon bonds and inflation protected securities.
2. Select derivative instruments including Interest Rate Forwards, Swaps and Futures.
3. Corporate bonds, including discussion of the risk premiums associated with the risk of default and partial recovery.
4. Select consumer finance structured securities such as Mortgage Backed Securities.
5. Time permitting, bond portfolio optimization.

The course and associated discussion will be focused on the practices used in the Fixed Income market. Evaluation of bonds is essentially a discounted cash flow exercise, consequently, as a pre-requisite, students must understand basic financial discounting processes. The course will include introduction (but not the theoretical foundation and proof) of the associated mathematics used in the Fixed Income markets. For Spring 2022, the course will be offered as an in-person learning framework. Some assignments may also require the use of the Bloomberg lab in Mason Hall.

Pre-Requisites

The Instructor reserves the right to make and communicate changes to this Syllabus.

This course will involve detailed and more complex application of financial discounting principles applied to the evaluation of Fixed Income Securities. **Students must have a good command of discounting methods and strong MS Excel skills**. Course pre-requisites include:

Undergraduate
BUSFIN 4221 "Investments" plus a 3.5 GPA or better

Masters
MBA 6223 "Finance" of BUSFIN 6211 "Finance I"

Course Resources

Course discussion will be drawn from professor compiled materials. Although purchasing a textbook is not required, analysis of Fixed Income Securities involves use of complex financial formulas. Consequently students should consider buying one of the following books as a supplement to the course and as a future reference for their personal library. These contain the financial formulas the professionals may need for future reference. Please also note that *Fixed Income Securities* (Pietro Veronesi), has also been a book used in BUSFIN 7222 Fixed Income Analysis.

1. Pietro Veronesi, ***Fixed Income Securities: Valuation, Risk and Risk Management***, Wiley.
2. Pietro Veronesi, ***Handbook of Fixed Income Securities***, Wiley. (Recommended)

Students must also have access to and be proficient in Microsoft Excel to evaluate the nature of the cash flows and discount formulas used for fixed income yields, prices and risks.

Course Evaluation

Bonds involve discounted cash flow analysis. Consequently, student evaluation will be heavily weighted toward MS Excel and Bloomberg based exercises. The contribution between exercises and the final exam will depend upon the number of exercises assigned (5-7).

Component	Contribution
Student Exercises	50-70%
Final Exam	30-50%
Attendance, Class Participation, Instructor Discretion	5%
Total Possible and Applied	105%, max of 100% applied

Final grades will be award using the standard OSU scale as presented below. Since the potential total contribution (above) exceeds 100%, students have the opportunity to boost their final grade by emphasizing all parts of the course evaluation. Any cumulative score above 100% will be rounded to 100%; otherwise, there will be no curve adjustment.

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CUMULATIVE SCORE	GRADE	CREDIT / HOUR
93-100%	A	4.0
90-92.9%	A-	3.7
87-89.9%	B+	3.3
83-86.9%	B	3.0
80-82.9%	B-	2.7
77-79.9%	C+	2.3
73-76.9%	C	2.0
70-72.9%	C-	1.7
67-69.9%	D+	1.3
60-66.9%	D	1.0
LT 60%	E	0.0

Class Participation (0-5%)
Class participation will be awarded on an individual basis at the sole discretion of the Instructor with emphasis on attendance and classroom participation. Participation is essentially "extra-credit" since students can earn up to 100% through completion of exercises and successful examinations (see below).

Student Exercises (50-70%)
Students will be expected to complete problems / exercises designed to reinforce the concepts presented in the classroom. **Exercises must be presented electronically into Canvas**.

Final Exam & Possible Quizzes (30-50%)
There will be a final exam covering full course materials. Exams will include short answers, multiple choice and true/false. Due to complexity and time constraints, computations during the exams or quizzes will be limited. Unannounced in-class quizzes may be used to measure student progress. Any such quiz will be short and directly related to recently studied materials.

Appeals and Late Submissions
Your instructor will exercise diligence and objectivity in evaluating exercises and exams. Perceived errors in grading may be appealed in writing within 1 week after the graded work is returned. The perceived error should include reference to the specific question or exercise and explanation of how the grading may be incorrect. The instructor will be pre-disposed to retain the original score unless a clear discrepancy is identified.

Since much of the emphasis will be on completing course problems and exercises, students who miss a class and the original exercise due date will be encouraged to submit a late-dated solution. Grading will be reduced by 1.5 points after the original due date the exercise is

submitted. For example, if a problem set is worth 10 points, 1.5 point reduction will be automatically taken, reducing the max score to 8.5 points (85%).

Academic Integrity

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the University's Code of Student Conduct, and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the University's Code of Student Conduct and this syllabus may constitute "Academic Misconduct."

The Ohio State University's Code of Student Conduct (Section 3335-23-04) defines academic misconduct as: "any activity that tends to compromise the academic integrity of the university, or subvert the educational process." Please see the Code for fuller description of activities that may be considered misconduct. https://trustees.osu.edu/bylaws-and-rules/code.

Your instructor will refer suspicions of misconduct to the Committee on Academic Misconduct. Judicial procedures can be found in the referenced Code.

Accommodation, Disability Services

The Student Life Disability Services (SLDS) collaborates with and empowers students who have disabilities to coordinate support services and programs that enable equal access to an education and university life. Contact SLDS for additional information and guidance. https://slds.osu.edu

Other

Electronic Devices

Use of electronic devices in the classroom can be disruptive to the user, other students and the Instructor. Students may use electronic devices for participating in class instruction, following slide presentations, and taking notes. Students should silence and put away phones and use other electronic devices coincident only with in-class instruction. During any remote learning session (not currently anticipated), students will need to mute their devices unless asking a question or participating in a discussion.

Attendance

Regular class attendance will be necessary in to achieve success. Attendance will have a direct impact on the classroom participation contribution. Exams and exercises may also include materials discussed in the class but otherwise not covered by the textbook or classroom discussion slides. The instructor may take in-classroom and on-line attendance and use those records to help inform participation bonus points.

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Out-of-Class Preparation
Students are expected in advance to be prepared for each in-class session. Out-of-class preparation includes any assigned readings, You Tube videos, associated problems and MS Excel and Bloomberg related exercises. Students should expect to spend a greater amount of time for out-of-class preparation relative to in-class discussion.

Tentative Course Schedule

Week	Topic	Exercises, Due Dates (50-70% of total points)
1: 1/10-12	Introduction to Bonds & Discount Rates	
2: 1/17-19	Bootstrapping & Basics on Interest Rate Changes	Bootstrapping Thu 1/19
3: 1/24-26	Risk, Durations, US Treasury Securities	Duration Calculations Thu 1/26
4: 1/31 & 2/2	Brief into to Derivatives, Credit & Corporate Bonds	US Treasury Selection Thu 2/2
5: 2/7-9	Corporate Bonds & Intro to Mortgages	Corporate Bonds Tue 2/14
6: 2/14-16	Mortgages & Intro to Market Dynamics	Mortgage Hedge Thu 2/16
7: 2/21-23	Portfolio Optimization & Final Study Guide	Portfolio Optimization Thu 2/23 (Time Permitting)
8: 2/28	Final, Tue, 2/28, 4:30-6PM	

Projects are due at the start of class on dates shown. To get full credit you must submit the project electronically into Canvas (time stamped).

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