

# MATH 384 - Mathematical Theory of Interest

Department of Mathematics and Statistics

Queen's University

**Instructor:** Cesar Aguilar, cesar@mast.queensu.ca

**Office Hours:** By appointment

**Textbook:** *Mathematics of Investment and Credit*, by Samuel A. Broverman, 3rd Ed.

**Course Description:** This is essentially a reading course. Students will work mostly on their own. There will be a total of six survey lectures, six problem solving sessions, and six tests throughout the term. The material to be covered is roughly Chapters 1-8 of the textbook: interest rate measurement, valuation of annuities, loan repayment, bond valuation, measuring the rate of return of an investment, term structure of interest rates, cashflow duration, and stock valuation.

**Pre-Requisite:** It will be assumed that students have a solid background in first year calculus.

**Schedule:** Officially slot 13: Mon 1:30-2:20, Wed 12:30-1:20, Fri 11:30. However, since this is a reading course, the following two-week-cycle format will be adopted:

- The six **survey lectures** will be held on Monday @ 13:30 of Weeks 1,3,7,9,11, and on Wednesday @ 12:30 of Week 5 (Monday October 8 is Thanksgiving Day).
- The six **problem solving sessions** will be held on Monday @ 13:30 of Weeks 2,4,6,8,10,12.
- The six **in class tests** will be held on Wednesday @ 12:30 of Weeks 2,4,6,8,10,12.
- Absolutely no meetings on Friday.

**Grading Scheme:** Six bi-weekly tests 40% (best five), Final exam 60%.

**The Tests:** The test and final exam are closed-book (relevant formulae will be provided). The test questions will be *similar* to the problems in the textbook. **A minimum of one week notice will be required in the event that you will not be able to write a test.**

**Calculator:** The use of the Casio 991 series calculator is permitted, or calculators with a Gold Applied Science approval sticker or a Blue Commerce approval sticker as they are considered to be comparable to the Casio 991.