

Math 418B Winter 2018
Financial Mathematics II

Instructor: Dr. Kathy Temple

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Office Hours: MWF 1 - 1:50PM, TTh 3 - 3:50PM, and by appointment.

Course Goals: This sequence of courses (418A, B, and C) is designed to provide students with an understanding of the fundamental concepts of financial mathematics, and how those concepts are applied in calculating present and accumulated values for various streams of cash flows as a basis for future use in reserving, valuation, pricing, asset/liability management, investment income, capital budgeting, and valuing contingent cash flows. The third quarter will also include an introduction to financial instruments, including derivatives, and the concept of no-arbitrage as it relates to financial mathematics. The sequence is designed to prepare students for Exam FM/2 offered by the Society of Actuaries; we will also cover some material that is on Exam MFE. This quarter, we will cover:

- valuation of annuities with non-level and continuous payments;
- loan repayments, both the amortization method and the sinking fund method;
- bond valuation;
- the term structure of interest rates;
- duration and immunization; and
- additional financial topics.

Prerequisite: Math 418A.

Required Text: Vaaler & Daniel, *Mathematical Interest Theory*, 2nd Edition. This quarter we will cover parts of chapters 4, 5, 6, 7, 8, and 9.

Evaluation:

- Two in-class exams (20% each); tentative testing dates: Wednesday, Jan. 31 and Wednesday, Feb. 21.
- Comprehensive final exam (30%); given Thursday, March 15, from 12-2PM. Please note that the final exam time is set by the Registrar's Office and cannot be changed. In particular, no early final exams will be given.
- Homework (25%).
- Case study (5%).

Grades will be assigned according to the following scale:

	A	93-100%	A-	90-92.99%	
B+	87-89.99%	B	83-86.99%	B-	80-82.99%
C+	77-79.99%	C	73-76.99%	C-	70-72.99%
D+	67-69.99%	D	63-66.99%	D-	60-62.99%
	F	59.99%			and below

Course Conduct:

- **Required Materials:** The textbook is required. You will also need at least a scientific calculator. I strongly recommend a financial calculator, in particular either the BAI+ or the BAI+ Professional. I will assume on exams that you have access to such a calculator.
- **Homework:** Homework will be assigned often in class and due dates will be announced at the time of the assignment. Homework must be done neatly, *stapled*, and written on clean-edged paper (no notebook fringes). Your work should be clear, in a logical order, use correct mathematical notation, and provide sufficient explanation. What's sufficient explanation? A good guide is to think about whether another student in the class who didn't know how to do this particular problem could understand your solution. This will also help you understand your solution later! Collaboration on homework is permitted, but **copying is not permitted**. A good rule of thumb is that you should write up a problem on your own, even if you worked with others to figure it out. Credit will not be given to any party for work which is identical. I reserve the right to change this syllabus, including evaluation procedures, if copying becomes a problem. Credit will not be given for late homework, but I will drop one homework score.
- **Exams:** Any changes to the tentative exam schedule will be announced in advance. Make-up arrangements must be made prior to an exam unless you can document an unexpected circumstance beyond your control that prevented you from taking the exam.
- **Case Study:** This quarter, we will be continuing the case study that we started fall quarter, incorporating additional information and techniques. We will be doing the case study a bit earlier this quarter - I expect that we will start it around week 3 and it will be due around the end of week 6 (Feb. 9).
- **Other Information:** Central Washington University is committed to creating a learning environment that meets the needs of its diverse student body. If you anticipate or experience any barriers to learning, discuss your concerns with the instructor. Students with disabilities should contact Disability Services to discuss a range of options to removing barriers, including accommodations. Student Disability Services is located in Hogue 126. Call (509) 963-2214 or email ds@cwu.edu for more information.

I reserve the right to adjust policies in this syllabus if necessary during the quarter.

During the last week of class, you will have regular homework assignments due. We will be covering new material up to and possibly including the last day of class.