COURSE SYLLABUS

Course Information

ACTUARIAL FINANCIAL MATHEMATICS

FALL 2016 **ACTS 6308**

Section	Call No	Course Meeting Times	Class Room	Instructor
6308.501	85346	MW 5:30 PM – 6:45 PM	**PHY 1.103**	Koshevnik

Professor **Contact Information** **Dr. Yuly Koshevnik**

Room: FA 2.408 **Phone: 972-883-4178** **Email: yuly.koshevnik@utdallas.edu**

Hours: M W 4:00 – 5:00 PM, T R 7:00 – 8:00 PM F 12 – 2 PM

Course Pre-requisites, Co-requisites, and/or Other Restrictions

MATH 2451, MIS 3300, or consent of instructor.

Course Description – See Below

Complete syllabus can be seen online – from **http://coursebook.utdallas.edu/**

Student Learning Objectives/Outcomes

The purpose of this 3-hour course is to provide 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 students will also be given an introduction to financial instruments, including derivatives, and the concept of no-arbitrage as it relates to financial mathematics. This class covers topics of Exam 2/FM. Instructor consent required.

Required Textbooks and Materials

1. S. Broverman: Study Guide for SOA Exam FM/CAS Exam 2, recent edition.

Textbook, lecture notes, calculator, and scratch paper should be brought to each class period. Students will be working problems in class. See the calculator requirements below.

IMPORTANT DATES & HOLIDAYS	
CLASSES START	AUGUST 22
LABOR DAY	SEPTEMBER 5
CENSUS DAY/ DROP WITHOUT A "W"	WEDNESDAY, SEPTEMBER 7
DROP (APPROVAL REQUIRED)	SEPTEMBER 8 – OCTOBER 27
DROP WITH WL	OCTOBER 4 – OCTOBER 27
INTERMEDIATE EXAM 1	OCTOBER 5
INTERMEDIATE EXAM 2	NOVEMBER 7
THANKSGIVING AND FALL BREAK	NOVEMBER 23 – 28
LAST DAY OF CLASSES	DECEMBER 7
FINAL EXAM	TBA

Grading Policy and Scale

Your course grade will be determined based on the following weighting:

Homework Assignments (**weekly, collected in class only**) **20%** (two lowest scores dropped)

Three **in class** Exams (**see schedule**) **25% + 25% + 30% = 80%**

No on-line homework submission and no make-up exam.

Grading: Scale	[98, 100]	[93, 97]	[90, 93)	[85, 89]	[80, 84]	[75, 79]	[70, 74]	[65, 69]	[60, 64]	[0, 59]
	A+	A	A -	B+	B	B -	C+	C	C -	F

Course & Instructor Policies

Homework: Homework will be assigned, collected in class, graded, and returned in class. No online submission, please! SIGN and STAPLE your work!!!

Exams: **Two** major **intermediate exams** and **comprehensive final exam** will be given as scheduled.

Calculator: Due to a large number of problems relying on specific financial keys, an SOA approved exam calculator is required: **the battery or solar–powered Texas Instruments BA–35 model calculator, the BA II Plus, the BA II Plus Professional**, the TI–30Xa or TI–30X II (IIS solar or IIB battery), or TI-30X MultiView (XS Solar or XB Battery).
For additional information please visit:

http://www.soa.org/education/exam-req/exam-day-info/edu-calculators.aspx

TENTATIVE COURSE OUTLINE		
No.	Topic	Dates
1	Calculus review and effective rates of interest and discount.	Aug 22 – 24
2	Nominal rates of interest and discount.	Aug 29 – 31
3	Force of interest, inflation.	Sep 7
4	Annuity-immediate and annuity-due.	Sep 12 – 14
5	Annuity valuation at any time point.	Sep 19 – 21
6	Annuities with differing interest and payment period.	Sep 26 – 28
7	Annuities whose payments follow a geometric progression.	Oct 3
	Intermediate Exam 1	Oct 5
8	Annuities whose payments follow an arithmetic progression.	Oct 10 – 12
9	Amortization of a loan.	Oct 12
10	The sinking fund method of loan repayment.	Oct 17 – 19
11	Bond valuation.	Oct 24 – 26
12	Bond amortization, callable bonds.	Oct 26 – 31
13	Measures of the rate of return on a fund.	Oct 31 – Nov 2
	Intermediate Exam 2	Nov 7
14	The term structure of interest rates, forward rates of interest and duration.	Nov 9 – 16
	Thanksgiving and Fall Break	Nov 21 – 26
15	Introduction to financial derivatives, forward and futures contracts.	Nov 28
16	Introduction to options.	Nov 30 – Dec 5
17	Option Strategies.	Dec 5 – 7
18	Swaps.	
	Final Exam	TBA

These descriptions and timelines are subject to change at the discretion of the Professor.

Common policies can be seen from http://provost.utdallas.edu/syllabus-policies/