

Contents Of Financial Mathematics Course (371 ACTU)

- The course covers the following topics from the SOA FM -Exam syllabus:

1. Time Value of Money
2. Annuities/cash flows with non-contingent payments
3. Loans
4. Bonds
5. Spot rate
6. Duration and convexity

- Contents covered during the course:

1. Time Value of Money

Lectures: class notes and slides

- + Section 1.12 (ACTEX) examples & exercises
- + some extra exercise from Actex: Sample Exam PE6-1: Q2.
- + Qs from 2018 sample Exam: 1,3, 9, 10

2. Annuities/cash flows with non-contingent payments

Lectures: class notes and slides which follow the order of ACTEX sections in this way:

Sections: 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.14, examples from 2.15,
sections: 2.8, 2.9, 2.10, examples 2.91 and 2.93 from section 2.15,
sections: 2.11, 2.12, 2.16, 2.17, 2.18

+ Qs from 2018 sample Exam: 2,4,8,11,14,15,20, 23, 24, 35,45, 63, 66, 67, 68, 70,
76, 78, 80, 82, 83, 84, 85.

3. Loans

Lectures: class notes and slides

Examples from slides;1,2,3,4,5,6,8 (example 7 has a mistake)
Examples from notes: 5.1, 5.2, and 5.3
Examples from Actex: 3.10, 3.12, 3.16
Table(3.17) from Actex
Exercises from Actex: 3.11, 3.13, 3.18
Balloon Payment Exercise

4. Bonds

Lectures: Slides: 5-1, 5-2, 5-3, 5-5

The write-up is omitted.

+Qs on Loans & Bonds from 2018 sample

Exam:6,7,12,13,21,23,26,33,34,40,41,42,45,47,48,49,59,60,61,64,67,69,71,72,81,82,87,88,89,90,92,93,95,96,97,98.

5. Spot rate

Lectures: Slide 6-3: examples 1,2,3.

6. Duration and convexity

Lectures: Slides: all examples

+ Qs from 2018 sample Exam: 30,31,32,50,51,100,101,102,144,152,153,155,165,183,195,205.

Tutorials

- **6 sheets to be given.**
- **Sample exam questions to be solved as homework and discussed if there are any difficulties during office hours or tutorial sessions.**