Department of Banking & Finance

College of Admin & Economics

University of Salahaddin-Erbil

Subject: Financial Mathematics

Course Book: (Year 2)

Lecturer's name: Ass.pro. dr. Fahmy M. Ali Abdullah

Academic Year: 2024/2025

Course Book

1. Course name	**Financial Mathematics**
2. Lecturer in charge	**Ass.pro.dr. Fahmy M. Ali Abdullah**
3. Department/ College	**Science of Financing& Banking /Business Admin & Economics**
4. Contact	**e-mail: fahmy.mohammad@su.edu.krd** **Tel: 07504773318**
5. Time (in hours) per week	**Theory: 3** **Practical: 0**
6. Office hours	**Tuesday 8:30 to 2:30**
7. Course code	
8. Teacher's academic profile	**I am holding MSc in Economic & BSc in Economic at Salahaddin Univ during 2009-2011. I participated in many training courses about Economics in Applied and Many English Language courses to improve my English Language for understand the science better than before. Furthermore, I am teaching different subjects, such as Public Finance, Financial Mathematics, and Bank marketing.**
9. Keywords	

10. Course overview:

The mathematics of science is involved in many parts of our daily life in general and it is applied in many areas such as in finance, business and accounting in particular.

The financial mathematics is an area of the areas of mathematics that helps us in finding the right answers to issues related to interest of investors, savers, borrowers and owners of financial institutions, management of factories and bond issuers and securities and many others.

The main objective in teaching this subject is;

Students will be able to identify basic concepts and methods of calculating simple interest and compound interest when borrowing, or percentage of total

allowance, through multiple time periods, as well as to identify the basic concepts of calculating Annuities, Sinking Funds, and Depreciation methods.

11. Course objective:

Students will be able to identify basic concepts and methods of calculating simple interest and compound interest when borrowing, or percentage of total allowance, through multiple time periods, as well as to identify the basic concepts of calculating Annuities, Sinking Funds, and Depreciation methods.

12. Student's obligation

Students in **Financial Mathematics** are expected to read and annotate my lecture outlines and required reading materials, and bring them to class each session.

In addition, it is strongly recommended that you subscribe to all journals about Public Finance in order to keep abreast of economics, financial and fiscal events.

13. Forms of teaching

We will be using Blackboard and PowerPoint for a variety of purposes. I am available after class also for answering your questions. You may wish to communicate with me via electronic mail (fahmy.mohammad@su.edu.krd) as I am usually logged in from somewhere.

14. Assessment scheme

Evaluation of students performance is based on written essay examination, problem sets, and class participation.

There will be two examination worth 40% . Students are expected to be in the classroom, ready for the class on or before the appointed time. The room will be closed upon the beginning of class, and students who are not in the room. After the closing of the door will not be allowed into the room. Students who leave the class after the class begins will not be permitted back in. do so before the start of class.

15. Student learning outcome:

Students can work to identify basic concepts and methods of calculating simple interest and compound interest when borrowing, or percentage of total

allowance, through multiple time periods, as well as to identify the basic concepts of calculating Annuities, Sinking Funds, and Depreciation methods.

16. Course Reading List and References:

- Key references: **jeff slater& rick ponicell- Mathematics of Finance 011- Third Edition. USA**
- Useful references: **matthew will- the mathematics of finance-2006**
- Magazines and review (internet): All.

17. The Topics: | **Lecturer's name**

Lecture	Topic
1	Chapter 1:Simple Interest
2	Holidays (Qurban Fest)
3	Chapter 1:Maturity Value
4	Chapter 1:Ordinary Interest & Exact Interest
5	Chapter 1:Present Value at Simple Interest
6	Chapter 2:Structurof Promissory Notes , The Simple Discount Note
7	Chapter 2:Understand U.S. Treasury Bills
8	Chapter 2:Discounting and Interest-Bearing Note before Maturity
9	Holidays (New year)
10	Chapter 3:Compound Interest
11	Exam 1
12	Chapter 3:The Future Value
13	Chapter 3:Daily & Continuous Compounding
14	Chapter 3:The Effective Interest Rate
15	Chapter 3:Present Value
16	Chapter 4:Installment Loans & Closed-End Credit
17	Chapter 4:The Instalment payment of an Instalment Loan
18	Chapter 5:The Future Value of a Simple Annuity

18. Practical Topics (If there is any)

Corporate finance and mathematics
The relationships between math and banking system

19. Examinations:

1. Compositional:

Ex. Sara deposit $1000 at the bank by simple interest rate 9%, at 10 July 2000 the Accumulate value

Was $1022.5 . Find the deposit date?

Ex. On 5 Feb 2008 Ali invest $1000 at the bank by simple interest rate 10%.

Find the due date if you know the different between exact interest and ordinary interest was $4?

Ex. Find simple interest rate for a loan $2000 borrowed for 120 days and the different between exact and ordinary interest $5 at 15 Aug 2002?

Ex. On 10 March 2002 Dana deposit $1500 at the bank by simple interest rate 8%.

Find exact interest at 15 Aug 2002?

20. Extra notes:

Freedom of expression and one's choice of attire arguably is a constitutionally protected right, for both men and women.

21. Peer review

The structure and the content of this course have been reviewed & assessed by head of the department & the scientific committee for approval.