CIHAN UNIVERSITY-SULAIMANIYA

Course Outline

2025-2026

Address: Chwarchra-Opposite to Family Mall
Sulaymaniyah City
Kurdistan Region–Iraq
Tel: 07714695656,
email: presidency@sulicihan.edu.krd

MODULE DESCRIPTION FORM

<table>
<tr><td colspan="5" align="center">Module Information</td></tr>
<tr><td>Module Title</td><td colspan="4">Financial Mathematics</td></tr>
<tr><td>Module Type</td><td colspan="3">Degree</td><td rowspan="4">☐ Theory
☐ Lecture
☐ Lab
☐ Tutorial
☐ Practical
☐ Seminar
☐ Report
☐ Extra activity</td></tr>
<tr><td>Module Code</td><td colspan="3"></td></tr>
<tr><td>Language</td><td colspan="3">English</td></tr>
<tr><td>ECTS Credits</td><td colspan="3"></td></tr>
<tr><td>Module Level</td><td></td><td>Semester of Delivery</td><td colspan="2">1st Semester</td></tr>
<tr><td>Administering Department</td><td>Business Administration</td><td>College</td><td colspan="2">Administration and Finance</td></tr>
<tr><td>Lecturer</td><td colspan="2">Nozad Hussein Mahmood</td><td colspan="2"></td></tr>
<tr><td>Academic Title</td><td>Lecturer</td><td>Qualification</td><td colspan="2">MSc. Statistics</td></tr>
<tr><td>Module Tutor</td><td colspan="2">Nozad Hussein Mahmood</td><td>e-mail</td><td>nozad.mahmood@sulicihan.edu.krd</td></tr>
<tr><td>Peer Reviewer Name</td><td colspan="2"></td><td>e-mail</td><td></td></tr>
<tr><td>Scientific Committee Approval Date</td><td colspan="2"></td><td>Version Number</td><td></td></tr>
<tr><td>Cycle of Study</td><td colspan="2">Bachelor</td><td>Form of Education</td><td>Full time</td></tr>
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<tr><td colspan="4" align="center">Relation with other Modules</td></tr>
<tr><td>Prerequisite module</td><td></td><td>Semester</td><td></td></tr>
<tr><td>Co-requisites module</td><td></td><td>Semester</td><td></td></tr>
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Cihan University Sulaimaniya
College of Business and financial Sciences

Department: **Business Administration**
Discipline: **Financial Mathematics**
Stage: 3

Total Contact Hours:	42
Total Self Study Hours:	66
Total No. Hours:	108
ECTS:	4

No. of Weeks	Contact Hours					Self-Study					
	Theoretical	Practical	Lab	Project	Visit	Quiz	Reading	Assignment	Report	Midterm Exam.	Final Exam.
1st Week (Registration)	2	1	-	-	-	-	2	-	-	-	-
2nd Week	2	1					2				
3rd Week	2	1					2	2			
4th Week	2	1				2		1			
5th Week	2	1					2				
6th Week	2	1						2	4		
7th Week	2	1				2	2				
8th Week	2	1					2			12	22
9th Week	2	1					2	2			
10th Week	2	1									
11th Week	2	1					2	1			
12th Week	2	1					2	2			
13th Week	2	1				2	2				
14th Week	2	1					2				
15th Week											
16th Week (Final Exam)											
TOTAL	28	14				6	22	10	4	12	22

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	- Definition of Interest, Principal, Interest Rate, and Time - Parties involved in a transaction: investor and debtor - Types of interest: Simple and Compound Interest
Week 2	- Simple Interest and its Elements (Principal, Rate, Time) - Simple Interest Formula: $I = P * r * t$ - Important notes on the simple interest formula
Week 3	- Solving for Principal (P), Rate (r), and Time (t) - Word problems and examples involving simple interest calculations
Week 4	- Definition of Maturity Value (Accumulated Value) - Formula for Maturity Value: $M = P + I$ - Calculating Maturity Value in various scenarios
Week 5	- Converting interest rates (semi-annually, quarterly, monthly, weekly) to annual rates - Converting time periods (months, weeks, days) into years - Examples and problem-solving
Week 6	- Approximate Time (30 days per month) - Exact Time (actual number of days in a month) - Calculating approximate and exact time between two dates
Week 7	- Exact Simple Interest (using 365 or 366 days) - Banker's Rule (using 360 days) - Formulas and applications of each type
Week 8	**Mid-Term Exam**
Week 9	- Detailed examples of calculating interest using the Banker's Rule - Calculating Maturity Value using the Banker's Rule - Relationship between Exact Simple Interest and Banker's Rule
Week 10	- Introduction to calculating total simple interest for multiple investments - Applying the method for deposits at the same interest rate - Using tables to organize calculations (P, t, P*t)
Week 11	- Incorporating withdrawals into the Numerous & Divisions Method - Using positive and negative signs for deposits and withdrawals - Calculating exact and Banker's Rule maturity values with multiple transactions
Week 12	- Introduction to Equal Periodic Payments - Formula for total interest with periodic payments - Defining variables: S (number of payments), T (total time), Ts (duration of payment)
Week 13	- Calculating total interest amount for periodic payments - Calculating the total payment (Maturity Value) - Solving for unknown variables in periodic payment problems
Week 14	**Course Review and Problem Solving**
Week 15	**Preparatory Week**
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week8	
Week9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	This module aims to provide students with a solid foundation in the fundamental concepts and calculations used in financial mathematics. The course will introduce the principles of simple interest and its practical applications in finance and business. Key objectives include: 1. To introduce the basic terminology and concepts of financial transactions, including principal, interest, interest rate, and time. 2. To develop the analytical and computational skills necessary to solve various financial problems involving simple interest. 3. To familiarize students with different methods of calculating interest and maturity values for loans, deposits, and investments. 4. To equip students with the ability to handle calculations involving multiple transactions (deposits and withdrawals) and periodic payments.

Module Learning Outcomes	Concepts covered in this course include Linear Programming, Artificial Variable Technique, Graphical method , Simplex Method . At the end of this course the student will: -
	1-understand what is meant of problem solving and decision making and quantitative methods.
	2. understand what is meant by quantitative analysis methods and how to formulate linear programming problems.
	3. learn how to construct a model to represent the systems. 4 learn how to derive a solution from the model and put the solution to work. 5. learn how to use a graphical method to solve two-variable L.P. Problems. 6. learn how to use a simple method to solve two-variable L.P. Problems an more than two-variables problems.

Learning and Teaching Strategies

Strategies	Whiteboard, whiteboard maker, data show, course note. Assessment scheme.

Module Evaluation

Assessment Types		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	5/3	15	4,7,13	5/3
	Assignments	2/5	10	6,12	2/5
	Projects / Lab.	1/5	5	6	1/5
	Report				
Summative assessment	Midterm Exam	2hr	20	8	2hr
	Final Exam	3hr	50	15	3hr
Total assessment			100% (100 Marks)		

Learning and Teaching Resources		
	Text	**Available in the Library?**
Required Texts	Lectures binder	
Recommended Texts	**Textbooks:** Lippman, D., 2013. *Math in society*. David Lippman.	**Web**
Websites	https://unglueitfiles.s3.amazonaws.com/ebf/360dbc30c26d45c5a419bf00d88e4921.pdf **https://granite.pressbooks.pub/math502/chapter/simple-and-compound-interest/** **https://www.mbacrystalball.com/blog/2015/11/06/simple-compound-interest/**	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Approved by Head of the Branch / Department	
Signature	
Date	*4/9/2025*

Name	*Lecturer .Saya Jamal Aziz*

Approved by Curriculum Development Committee and Bologna Process Committee	
Signature	
Date	
Name	