

TOROS ÜNİVERSİTESİ

Faculty Of Economic, Administrative And Social Sciences
International Finance (English)

Course Information

FINANCE MATHEMATICS					
Code	Semester	Theoretical	Practice	National Credit	ECTS Credit
		Hour / Week			
INF208	Spring	3	0	3	5

Prerequisites and co-requisites	NA
Language of instruction	English
Type	Required
Level of Course	Bachelor's
Lecturer	
Mode of Delivery	Face to Face
Suggested Subject	NA
Professional practise (internship)	None
Objectives of the Course	It is aimed to explain the economic theories via advanced quantitative techniques.
Contents of the Course	Basic mathematical functions (linear, polynomial, exponential, logarithmic). Modeling and regression. Time value of money, interest calculations, cash flows, present value, loan payments, annuities. Limit, interest calculations in continuous component. Derivative, maximum and minimum problems. Ordinary differential equations, applications of interest accounts. Matrices and linear equations, inequalities, applications of cash flows. Functions of several variables, partial derivatives. Optimization problems, linear programming, quadratic programming, and constraints, portfolio optimization. Basic statistical information, data types, and decision-making. Probability, random variables, distribution functions, the conditional probabilities, Stochastic processes, stationarity, stationarity tests. Stochastic differential equations, Black-Sholes equation and applications. Stochastic properties of time series, modeling and forecasting.

Learning Outcomes of Course

#	Learning Outcomes
1	To be able to explain rules of finance.
2	To be able to explain simple and compound interest.
3	To be able to explain simple and compound discount.
4	To be able to build model.

Course Syllabus

#	Subjects	Teaching Methods and Technics
1	The rules of finance	Lecture
2	Simple and compound interest	Lecture
3	Present value of debt	Lecture
4	Present values, equations of value. equated time. future values	Lecture
5	Simple and compound discount (Simple/compound discount at an interest rate)	Lecture
6	Simple/compound discount at a discount rate, bonds	Lecture
7	Price of a bond, premium and discount, quoted price	Lecture
8	Mid-term Exam	Lecture

9	Yield rate, bonds with optional redemption dates, annuity bonds	Lecture
10	Trademark	Lecture
11	Amortization and sinking funds (Amortization of a debt, amortization schedule, sinking funds, sinking funds schedule, depreciation, depletion.)	Lecture
12	Cost and revenue functions	Lecture
13	Supply and demand functions	Lecture
14	General Evaluation	Lecture
15	General Evaluation	Lecture
16	Final Exam	

Course Syllabus

#	Material / Resources	Information About Resources	Reference / Recommended Resources
1	İşletme Finansının Temelleri, Richard A., Brealey, Stewart C. Myers, Alan J. Marcus ISBN: 975-7860-88-3.		

Method of Assessment

#	Weight	Work Type	Work Title
1	40%	Mid-Term Exam	Mid-Term Exam
2	60%	Final Exam	Final Exam

Relationship between Learning Outcomes of Course and Program Outcomes

#	Learning Outcomes	Program Outcomes	Method of Assessment
1	To be able to explain rules of finance.	1,3,6	1,2
2	To be able to explain simple and compound interest.	1,6,8	1,2
3	To be able to explain simple and compound discount.	1	1,2
4	To be able to build model.	1	1,2

PS. The numbers, which are shown in the column Method of Assessment, presents the methods shown in the previous table, titled as Method of Assessment.

Work Load Details

#	Type of Work	Quantity	Time (Hour)	Work Load
1	Course Duration	14	3	42
2	Course Duration Except Class (Preliminary Study, Enhancement)	14	3	42
3	Presentation and Seminar Preparation	0	0	0
4	Web Research, Library and Archival Work	0	0	0
5	Document/Information Listing	0	0	0
6	Workshop	0	0	0
7	Preparation for Midterm Exam	1	16	16
8	Midterm Exam	1	2	2
9	Quiz	0	0	0
10	Homework	2	9	18
11	Midterm Project	0	0	0
12	Midterm Exercise	0	0	0
13	Final Project	0	0	0

14	Final Exercise	0	0	0
15	Preparation for Final Exam	1	27	27
16	Final Exam	1	3	3
				150