OSTIM TECHNICAL UNIVERSITY
FACULTY OF ECONOMICS AND ADMINISTRATIVE SCIENCES
INTERNATIONAL TRADE AND FINANCE DEPARTMENT
COURSE SYLLABUS FORM

BUS 103 Business Mathematics I

Course Name	Course Code	Period	Hours	Application	Laboratory	Credit	ECTS
Business Mathematics I	BUS 103	Fall	3	0	0	3	5

Language of Instruction	English
Course Status	Compulsory
Course Level	Bachelor
Learning and Teaching Techniques of the Course	Lecture, Discussion, Question Answer, Problem Solving

Course Objective

This course introduces students to the mathematical concepts and applications necessary for successful business careers. The contents of the course include language of algebra, fundamentals of calculus, basic mathematical operations, solving equations, functions, simple and compound interests.

Learning Outcomes

The students who succeeded in this course will be able to;
1. recognize the numbers, arithmetic operations
2. recognize the elementary algebra
3. do basic financial calculations
4. solve the equations

Course Outline

Numbers and arithmetic operations, elementary algebra, applications in business, fundamentals of calculus I: differential calculus

Weekly Topics and Related Preparation Studies		
Weeks	**Topics**	**Preparation Studies**

1	Review of Introductory Mathematics	Terminology: Basic mathematical symbols and definitions. Four Basic Arithmetic Operations Basic mathematical operations of addition, Subtraction, multiplication, and division of whole numbers.
2	Fractions and Decimals	Basic operations of addition, subtraction, multiplication, and division using fractions and in decimal form
3	Exponents and Radicals	Addition, subtraction, multiplication, and division of numbers with exponents and radicals, basic rules of exponents, simplifying radicals, converting radicals into exponential form
4	Operations with Algebraic Expressions	Addition, subtraction, removing grouping, multiplication, factoring
5	Percentages	Conversion between percent, decimals, and fractions.
6	Algebra: Linear and Quadratic Equations	Solving linear equations, ratio and proportion, solving quadratic equations, applications of equations
7	Algebra: Simultaneous Equations	Solving for two and three unknowns using simultaneous equations
8	**Mid-term Exam**	
9	Functions and Lines	Solving functions, inverse functions, case-define functions, factorials, symmetry, slope of a line, demand and supply functions, elasticities
10	Logarithms	Natural and common logarithm, basic rules of logarithm
11	Matrix Algebra	Matrices, equality of matrices, transpose of a matrix, special matrices, scalar multiplication, subtraction of matrices, matrix multiplication
12	Matrix Algebra	Identity matrix, solving systems by reducing matrices, matrix equations, inverse of a matrix, Leontief matrix
13	Business Applications	the percentage ratio of profit / loss and cost, time of the value (simple and compound interest, etc.)
14	Business Applications	discounted present value, net present value
15	Business Applications	return, expected value, bond pricing
16	**Final Exam**	

Textbook(s)/References/Materials:

Main Text Book:
Haeussler, E.F., Paul, R., Wood, R. Introductory Mathematical Analysis. Pearson, 2022.

Supplementary Documents:

1. Calaway S., Hoffman D., Lippman D. Business Calculus. Opentextbookstore.com, 2013.
2. J.Oliver. Business Math: A-Step-by-Step Handbook. Lyryx Version 2021-B, 2021.
3. Marecek L., Intermediate Algebra, OpenStax, 2017.

Assessment		
Studies	**Number**	**Contribution margin (%)**
Attendance	14	%0
Lab	0	%0
Classroom application and performance	0	%0
Field Study	0	%0
Course-Specific Internship (if any)	0	%0
Quizzes / Studio / Critical	0	%0
Homework	0	%0
Presentation	0	%0
Projects	0	%0
Report		%0
Seminar		%0
Midterm Exam / Midterm Jury	1	%40
General Exam / Final Jury	1	%60
Total		**%100**
Success Grade Contribution of Semester Studies		%40
Success Grade Contribution of End of Term		%60
Total		%100

ECTS / Workload Table

Activities	Number	Duration (Hours)	Total Workload
Course hours (Including the exam week: 16 x total course hours)	16	3	48
Laboratory			
Application			
Course-Specific Internship			
Field Study			
Study Time Out of Class	16	4	64
Presentation / Seminar Preparation			
Projects			
Reports			
Homework			
Quizzes / Studio Review			
Preparation Time for Midterm Exam / Midterm Jury	1	4	4
Preparation Period for the Final Exam / General Jury	1	4	4
Total Workload/25 hours	**(120/25 = 4.8)**		
ECTS	**5**		

Relationship Between Course Learning Outcomes and Program Competencies

No	Learning Outcomes	Contribution Level				
		1	2	3	4	5
LO1	To recognize the numbers, arithmetic operation					X
LO2	To recognize the elementary algebra					X
LO3	To do basic financial calculations					X
LO4	To solve the equations					X
L05	To combine maths and different business applications					X

No	Program Competencies	Learning Outcomes					Total Effect (1-5)
		LO1	LO2	LO3	LO4	LO5	
	Relationship Between Course Learning Outcomes and Program Competencies						
1	Have advanced theoretical and up-to-date knowledge in discipline-specific areas such as international trade, finance, logistics, and general business and international business such as economics, marketing, management, accounting.	X	X	X	X	X	3
2	Evaluate, follow, absorb and transfer new information in the field of international trade.			X		X	2
3	Conduct market research, carry out projects and develop strategies for a business to open up to international markets.			X	X	X	3
4	Use knowledge of national and international trade law and legislation in the management of international commercial operation processes.			X		X	2
5	Work independently and within an organization, using the knowledge and skills acquired in the field and adopting continuous learning.			X		X	2
6	Have the ability to apply her theoretical knowledge in real life, with the experience she will gain through practice in departments such as marketing, accounting, foreign trade, finance, logistics.	X	X	X	X	X	5
7	Have the theoretical knowledge to carry out export, import, customs clearance, logistics, taxation and other international trade activities within the scope of global and regional commercial and economic organizations.	X		X	X	X	4
8	Can develop a business idea, commercialize the business idea, and design and manage their own venture using their entrepreneurial knowledge.	X		X		X	3
9	Using strategic, critical, innovative and analytical thinking skills, actively take part in the decision-making processes of the enterprise in the field of foreign trade and finance.	X		X	X	X	4
10	Act in accordance with ethical values, respectful to the environment, social and universal values in all activities it will carry out in its field.			X			1
11	Have the skills to follow up-to-date information at national and international level, to gather information about field, and to communicate with international institutions / organizations using her/him knowledge of English and a second foreign language of her choice.			X		X	2
12	Gain professional competencies to take charge in national and international businesses, public and private sector organizations			X		X	2
13	Can evaluate the problems and conflicts encountered in all areas related to international trade from different perspectives with a holistic approach and			X			1

produce value-based solutions.							
Total Effect							34

Policies and Procedures
Web page: https://www.ostimteknik.edu.tr/uluslararasi-ticaret-ve-finansman-bolumu-209 https://www.ostimteknik.edu.tr/international-trade-and-finance-232
Exams: The exams aim at assessing various dimensions of learning: knowledge of concepts and theories and the ability to apply this knowledge to real-world phenomena, through analyzing the situation, distinguishing problems, and suggesting solutions. The written exams can be of two types,ie. open-ended questions, which can also be in the form of problems or multiple-choice questions. Examinations are individual and must be completed without any outside assistance. Students who attempt to cheat during exams will receive a failing grade from that exam. The case could also be carried to the Dean's Office for additional disciplinary action.
Assignments: Not applicable.
Missed exams: Any student missing an exam needs to bring an official medical report to be able to take a make-up exam. The medical report must be from a state hospital.
Projects: Not applicable.
Attendance: Attendance requirements are announced at the beginning of the term. Students are usually expected to attend at least 70% of the classes during each term.
Objections: If the student observes a material error in his/her grade, he/she has the right toplace an objection to the Faculty or the Department. The claim is examined and the student is notified about its outcome.