SVEUČILIŠTE U RIJECI
FAKULTET ZA MENADŽMENT
U TURIZMU I UGOSTITELJSTVU
OPATIJA, HRVATSKA

DETAILED COURSE CURRICULUM

OPĆE INFORMACIJE		
Course name	Mathematics	
Study programme	Business Economics in Tourism and Hospitality - module Hospitality Management	
Year of study	First	
Course status	Mandatory	
Course web site	https://moodle.srce.hr/2021-2022/course/view.php?id=97506	
Evaluation in points and forms of classes:	***ECTS coefficient of student workload***	6
	Number of classes (L+P+S)	30+30+0
Course holder	***Name and surname***	Krešo Mihalinčić, Ph.D.
	Office	308
	Office hours Ponedjeljak 10,00 – 12,00 Srijeda 15,00 – 17,00	
	Telephone	051/294-756
	Email	kresom@fthm.hr

COURSE DESCRIPTION

Course objectives

Introduce students to the basic concepts of calculus (analysis of functions), financial mathematics (principles and applications of interest and compounding) and linear algebra (matrices) and instruct them to recognize and apply these concepts in quantitative economic models

Expected learning outcomes related to the course

Students will be able to:

1. Describe the main properties of the field of real numbers
2. Analyze functions on the field of real numbers (increase and decrease, speed of change, extreme values)
3. Apply derivatives and integrals to economic problems (profitability, elasticity of demand)
4. Calculate present and future values of one or more investments
5. Apply matrices to the systems of linear equations in economic practice

Teaching methods

Lectures with exercises

Students' obligations and method of evaluating the obligations (integration of learning outcomes, teaching methods and assessment)

Activity type	***ECTS credits assigned to the activity***	***Learning outcomes***	***Student activity***	***Assessment method***	***Credits (maximum per value)***

Class attendance	2	1-5	Attendance: >75%	Evidence of class attendance	0
Project activity 1	0,5	1-3	Students' independent work – problem solving	Evaluation of the accuracy of the standard content.	10
Project activity 2	0,5	4	Students' independent work – problem solving	Evaluation of the accuracy of the standard content.	6
Project activity 3	0,5	5	Students' independent work – problem solving	Evaluation of the accuracy of the standard content.	6
Project activity 1-3 (total)	1,5	1-5			22
Periodic tests (mid-term exams)	1,5	1-5	Preparation for the periodic test	Evaluation of the accuracy of the standard content.	1. mid-term 30 2. mid-term 18
Final exam	1	1-5	Preparation for the final exam	0-30	30
Total ECTS	6			**Total points**	100

Notes and activity description

Knowledge is assessed based on a student's ability to solve problems. Successful problem solving requires a basic understanding of the underlying theoretical concepts presented in the lectures and an application of mathematical techniques demonstrated in the exercises.
The first project activity covers selected topics of mathematical analysis, the second one financial mathematics and the third matrices. All problems are solved individually, close to the mid-term exams. Tests are conducted via a multiple choice test module within the Merlin online tool.

Assessment method

The assessment and the evaluation of the students' work during the class and on the final exam is carried out according to the Rulebook on evaluation of students at the Faculty of Tourism and Hospitality Management.

REFERENCES

Mandatory references

K. Mihalinčić, „Matematika", online lecture notes on Merlin site
https://moodle.srce.hr/2021-2022/course/view.php?id=97506

Additional references

1. C. Simon and L. Blume, „Mathematics for Economists", W.W. Norton & Company, inc., New York, 1994

2. J. Niesen, „MATH1510 Financial Mathematics I“, http://www1.maths.leeds.ac.uk/~jitse/math1510/notes-all.pdf

Quality and course performance monitoring method

The quality of lectures is monitored according to the regulations of the University of Rijeka. In the last weeks of lectures of the current semester, an anonymous survey is conducted to let students evaluate the quality of lectures in the Course.

EXAM DEADLINES

The schedule of exam deadlines is available at the link: https://www.fthm.uniri.hr/studiji/preddiplomski-sveucilisni-studij/ispiti

ADDITIONAL COURSE INFORMATION

Method of informing the students

The students are informed on the course through the Merlin system and the Faculty web site https://www.fthm.uniri.hr/.

Regular information is the personal responsibility of the student.

LECTURES SCHEDULE

FULL-TIME STUDIES

The lectures of the course will be held according to the following schedule:

R. br.	Datum / vrijeme od – do / dvorana	Vrsta i oblik nastave	Tema	Grupa	Izvoditelj
1.	05.10.2022 B5	P 08:00-09:30	The field of real numbers R; Intervals	MOR	Krešo Mihalinčić
		V 09:30-11:00	Basic equations on R	MOR	Krešo Mihalinčić
2.	12.10.2022	P 08:00-09:30	The concept of a function	MOR	Krešo Mihalinčić
		V 09:30-11:00	Polynomials and rational functions	MOR	Krešo Mihalinčić
3.	19.10.2022	P 08:00-09:30	Straight line and a parable; Revenue, Cost, Profit	MOR	Krešo Mihalinčić
		V 09:30-11:00	The concept of differentiation and derivatives	MOR	Krešo Mihalinčić
4.	26.10.2022	P 08:00-09:30	Derivation of polynomials and powers	MOR	Krešo Mihalinčić
		V 09:30-11:00	Rules of derivation (sum, multiplication, quotient)	MOR	Krešo Mihalinčić
5.	02.11.2022	P 08:00-09:30	Exponential and logarithmic function	MOR	Krešo Mihalinčić
		V 09:30-11:00	Derivation of composite function	MOR	Krešo Mihalinčić
6.	09.11.2022	P 08:00-09:30	Local and global extrema	MOR	Krešo Mihalinčić
		V 09:30-11:00	Extrema: first derivative	MOR	Krešo Mihalinčić
7.	16.11.2022	P 08:00-09:30	Extrema: second derivative	MOR	Krešo

					Mihalinčić
		V 09:30-11:00	Extrema (applications)	MOR	Krešo Mihalinčić
8.	23.11.2022	P 08:00-09:30	Indefinite integral	MOR	Krešo Mihalinčić
		V 09:30-11:00	Total and marginal cost	MOR	Krešo Mihalinčić
9.	30.11.2022	P 08:00-09:30	Recap	MOR	Krešo Mihalinčić
		V 09:30-11:00	Test 1	MOR	Krešo Mihalinčić
10.	07.12.2022	P 08:00-09:30	Mid-term exam 1	MOR	Krešo Mihalinčić
		V 09:30-11:00	Mid-term exam 1	MOR	Krešo Mihalinčić
11.	14.12.2022	P 08:00-09:30	Financial mathematics: Intro	MOR	Krešo Mihalinčić
		V 09:30-11:00	Rents: future value	MOR	Krešo Mihalinčić
12.	21.12.2022	P 08:00-09:30	Rents: present value	MOR	Krešo Mihalinčić
		V 09:30-11:00	Loan (fixed annuity)	MOR	Krešo Mihalinčić
13.	11.01.2023	P 08:00-09:30	The concept of a matrix	MOR	Krešo Mihalinčić
		V 09:30-11:00	Operations with matrices	MOR	Krešo Mihalinčić
14.	18.01.2023	P 08:00-09:30	Systems of linear equations	MOR	Krešo Mihalinčić
		V 09:30-11:00	Gauss-Jordanova method	MOR	Krešo Mihalinčić
15.	25.01.2023	P 08:00-09:30	Mid-term exam 2	MOR	Krešo Mihalinčić
		V 09:30-11:00	Mid-term exam 2	MOR	Krešo Mihalinčić