Sveučilište u Rijeci • University of Rijeka

Trg braće Mažuranića 10 • 51 000 Rijeka • Croatia
T: +385 (0)51 406 500 • F: +385 (0)51 406 588
W: www.uniri.hr
E: ured@uniri.hr

Table 2

Course description

COURSE DESCRIPTION	
Course instructor	**Krešo Mihalinčić**
Name of the course	**Mathematics**
Study programme	**Management of Sustainable Development**
Status of the course	**Compulsory**
Year of study	**1st**
ECTS credits and manner of instruction	**ECTS credits** / 6 **Number of class hours (L+E+S)** / 60 (30 + 30 + 0)

1. Course objectives

Development of general and specific competencies required to connect economic theory and mathematical methods in order to model and interpret information based on empirical data regarding contemporary trends in tourism and hospitality industry

2. Course enrolment requirements

None

3. Expected learning outcomes

After completing the course, the student will be able to:
1. Define and distinguish the basic concepts of linear algebra, calculus and financial mathematics
2. Apply derivation rules to solve problems
3. Calculate extreme values of functions of one and two variables
4. Compare numerical and percentage growth of functions based on calculus and elasticity coefficients
5. Apply matrices, derivatives and integrals in economic problems

4. Course content

LINEAR ALGEBRA WITH MATRICES (matrices, vector spaces, vectors, rank of a matrix, systems of linear equations, determinants, inter-industry model and input-output analysis)
DIFFERENTIAL CALCULUS AND APPLICATIONS (real numbers and real functions of a real variable, continuity and limit of a function, derivations of functions and applications, extreme values of functions of one- and two real variables, elasticity coefficients)
INTEGRAL CALCULUS AND DYNAMIC ANALYSIS (indefinite integral, integration rules and methods, definite integral and applications, improper integral, differential equations and business applications)
FINANCIAL MATHEMATICS (simple and compound interest, decursive and anticipative interest calculation, discrete capitalization, present and future values, loans and credits, continuous capitalization)

5. Manner of instruction	☒ lectures ☒ seminars and workshops ☒ exercises ☐ distance learning ☐ fieldwork	☒ individual assignments ☐ multimedia and network ☐ laboratories ☒ mentorship ☐ other
6. Comments	The course involves areas of both pure and applies mathematics; however, the emphasis is on an application of mathematical methods in the analyses of empirical data from contemporary tourism and hospitality	

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	industries

7. Student responsibilities

Students are required to complete two projects and assessments using mandatory and optional/additional literature to demonstrate the acquired knowledge, skills and competencies from a specified field. Both team- and individual work are advised.

8. Monitoring of student work[1]

Class attendance	2,4	Class participation		Seminar paper		Experimental work	
Written exam	1,1	Oral exam		Essay		Research	
Project	0,3	Continuous assessment	1,7	Report		Practical work	
Portfolio						homework	0,5

9. Assessment of learning outcomes in class and at the final exam (procedure and examples)

Assessment and evaluation of students in classes and at the final exam is conducted under the Rulebook on evaluation of students at the Faculty of tourism and hospitality management.
For each course it is made a detailed course syllabus which coordinates activities, student load, learning outcomes and evaluation methods.

10. Mandatory literature (at the time of submission of study programme proposal)

L. Neralić, B. Šego, "Matematika", Element, Zagreb, 2009.

11. Optional/additional literature (at the time of submission of the study programme proposal)

A.C. Chiang, "Osnovne metode matematičke ekonomije", MATE, d.o.o., Zagreb, 1994.

12. Quality monitoring methods that ensure the acquisition of exit knowledge, skills and competences

The quality of the programme, teaching process, teaching skills and level of acquired course matter will be evaluated in writing, by means of extensive questionnaires and by employing other methods that are in accordance with the accepted standards and with the Book of regulations on the quality of the University of Rijeka, as well as the Book of regulations on the quality of the Faculty of tourism and hospitality management.

[1] IMPORTANT: Enter the appropriate proportion of ECTS credits for each activity so that the total number of credits equals the ECTS value of the course. Use empty fields for additional activities.