General information		
Course leader	**Zlatan Morić, Lecutrer**	
Course title	**Application of Scripting Languages**	
Study programme		
Course status	Mandatory	
Year	Year 1, semester 1	
Number of credits and mode of teaching delivery	ECTS student workload coefficient	5
	Number of hours (L+E+S)	60 (30 P + 30 V + 0 S)

COURSE DESCRIPTION

1.1. Course objectives

Scripting languages represent a style of programming that is different from common programming languages. Their purpose is to compose programs from ready-made application components. This achieves a higher level of programming and faster application development. Within the course, students are introduced to the features and areas of application of scripting languages. Students are acquainted with the basics of the Python programming language, and the advanced use of Python in data processing and visualization.

1.2. Conditions for enrolment in the course

No formal conditions.

1.3. Expected learning outcomes of the course

- **LO1 - Analyse the concepts of vocabulary, syntax and semantics of a scripting language**
- **LO2 - Implement procedural programming concepts**
- **LO3 - Explain and apply the concepts of object-oriented programming in a scripting language**
- **LO4 - Implement a suitable solution for data processing and visualization**
- **LO5 - Design and implement an application testing solution**

1.4. Course content

Introduction - properties and areas of application of scripting languages.
Interface to operating system.
Introduction to the Python programming language
Basic data types
Character string operations
Character string methods
List
Dictionaries; Files
Commands and program constructs in Python

Functions, modules, namespaces		
Functions, modules, namespaces **Object Oriented Programming in Python** **Use libraries (e.g. MatPlotLib) to visualize data** **Use libraries (e.g. Pandas) to prepare data** **Use libraries (e.g. UnitTest) to write unit tests**		

1.5. Teaching delivery modes:	☒ lectures ☐ seminars and workshops ☒ exercises ☐ remote learning ☐ field work	☒ independent work ☐ multimedia and network ☒ laboratory ☒ mentoring ☐ other _____

1.6. Comments	

1.7. Student obligations

STUDENT ATTENDANCE

Class attendance is mandatory in the percentage prescribed by the Studies and examination regulations.

PASSING THE EXAM

The course has defined learning outcomes. In order for a student to pass the course, he/she must achieve a minimum of 50% of the points available for each learning outcome and collect a minimum of 50.01 points out of a possible 100 points per course.

1.8. Monitoring[1] student work

Class attendance		Activity during class		Seminar paper		Experimental work	
Written exam	50%	Oral exam		Essay		Research	
Project	50%	Continuous assessment of knowledge		Student report		Practical work	
Portfolio		Homework					

1.9. Assessment and evaluation of student work during classes and the final exam

A grading system based is on a credit accumulation model combined with a defined sub-model, providing a model of the grading method and checking the satisfaction of learning outcomes used in this course.

CONCRETE REVIEW OF EVALUATION METHODS

The maximum number of points that a student can earn in a course is 100. Grades are calculated according to the following criteria table within which the distribution of

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passing grades in terms of the number of points is applied.

Points	Grade
0,00 - 50,00	(1) unsatisfactory
50,01 - 58,00	(2) sufficient
58,01 - 75,00	(3) good
75,01 - 92,00	(4) very good
92,01 - 100,00	(5) excellent

The method of accumulating points is determined in this course in accordance with the elements of scoring as follows:

Criterion	Maximum points
Project	50
Written exam	50
TOTAL	100

The way of taking the colloquiums, the learning outcomes it covers, as well as the implementation of exams and remedial exams are defined by the "Instructions for attending and taking the course".

| *1.10.* | *Required reading (at the moment of submitting the joint study programme report)* |

- **Matthes: Python Crash Course, 2nd Edition: A Hands-On, Project-Based Introduction to Programming**

| *1.11.* | *Additional reading (at the moment of submitting the joint study programme report)* |

- **Moric: Introduction to Python**
- **Barry: Head First Python**

1.12. Number of copies of required reading in relation to the number of students who currently attend a course

Title	Number of copies	Number of students

1.13. Methods of quality monitoring that ensure the acquisition of knowledge, skills and competencies.

Monitoring the fulfilment of the desired learning outcomes is an important element of assessment because learning outcomes are the "guarantees" that the school gives to students, but also to employers and the wider community. Learning outcomes represent

the minimum threshold that each student must achieve in order to pass the course. For a passing grade, the student must satisfy all the learning outcomes with the demonstrated knowledge, which corresponds to 50% of the points achieved for each learning outcome. The method of scoring based on learning outcomes is presented in the document "Instructions for attending and taking the course".