

# Course syllabus

## 1. Core data

Course code	Credits	Semester
MSST049NMBB	6	2024/25/2
Course title in Hungarian		
Statisztika II		
Course title in English		
Statistics II.		
Course title in other language		
Course leader	Institute	
Balázsne Mócsai Andrea	Institute of Data Analytics and Information Systems	
Language of instruction	Type of final assessment	
Hungarian	Seminar grade	
Number of theoretical classes per week (full-time programmes)	Number of practical classes per week (full-time programmes)	
0	4	
Number of theoretical classes per semester (part-time programmes)	Number of practical classes per semester (part-time programmes)	
0	0	
Available for preferential study schedule		
No		

## 2. Main features

Course objectives
Mastering the basics of inferential statistics and introducing the most well-known statistical tests (t-test, independence test). Developing the ability to apply the learned statistical toolkit through the use of Python programs. Demonstrating the business applications of statistical methods. The aim of the course is to enable students to use the inductive (inferential) statistical methods necessary for practicing their profession and to lay the foundation for applying methods encountered in the study of specialized subjects.
Brief description of the course
The course covers three important areas of statistics: estimation theory, hypothesis testing, and correlation and regression analysis.
Relationship with other courses of the programme
The course builds organically on the Statistics I course, where students learned the basic concepts of descriptive statistics and were introduced to fundamental analytical tools and indicators. In Statistics II, we continue building towards statistical modeling, for which the mathematical foundations are provided by Mathematics I-II courses. The course is taught in a Python environment, the basics of which students learned in the Introduction to Programming course. The acquired statistical toolkit serves as the foundation for Business Informatics and Artificial Intelligence courses, but the knowledge gained can be utilized in all areas of economic and business analysis, while the use of Python provides support in the field of information technology.

## 3. Learning outcomes

Skill	Knowledge	Attitude	Autonomy and Responsibility
By the end of the semester, the student: - is able to independently formulate new inferences, original ideas, and solutions, apply sophisticated analytical	know the modern, theoretically demanding inferential statistical methods for problem identification, formulation, and solution, as well as information gathering and	By the end of the semester, the student: - knows the fundamental values and norms of economic and business analysis, striving for their critical interpretation and	The student: - independently selects and applies the relevant problem-solving methods when solving analytical tasks, examines, accepts, and manages the

and modeling methods, develop strategies for solving complex problems, and make decisions in a changing domestic and international environment, as well as in different organizational cultures. - is able to organize and critically analyze professional sources and data, using modern information and communication technology tools, and rely on advanced mathematical, statistical, econometric, and modeling methods in their analyses.	processing, and understands their limitations	development. - possesses a problem-centered perspective and problem-solving mindset, characterized by a cultured, ethical, and objective intellectual approach towards individuals and their relationship to societal issues.	responsibility that the results obtained during analysis and practical procedures depend on the chosen method. - takes responsibility for their own work and decisions.
Interprets and utilizes the results of quantitative analysis based on known data sources and visually presents them. Is able to understand and interpret a statistical analysis. Formulates independent conclusions and critical observations.			
The student is able to independently formulate simpler problems, think through and justify the solutions.			
The student is able to grasp complex problems, apply the necessary knowledge, and make independent conclusions. The student can solve problems by applying them in a Python environment and interpret the solution with its help.			
Through the modeling task, the student is capable of performing a more advanced level of analysis, recognizing and interpreting the causes.			

#### 4. Mandatory readings

Required literature	URL
Moodle tananyagok (előadás-vázlatok, jegyzet, modellek és videók)	Moodle learning materials (lecture outlines, notes, models and videos)
Moodle feladatgyűjtemény	Moodle exercise collection