

## Subject card

|                                             |                                                                                                                                                                                                                                               |                                                          |                                         |                                     |                                                                                                                      |            |     |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------|------------|-----|
| Subject name and code                       | Decriptive Statistics, PG_00174014                                                                                                                                                                                                            |                                                          |                                         |                                     |                                                                                                                      |            |     |
| Field of study                              | Logistics and Mobility                                                                                                                                                                                                                        |                                                          |                                         |                                     |                                                                                                                      |            |     |
| Date of commencement of studies             | October 2025                                                                                                                                                                                                                                  |                                                          | Academic year of realisation of subject |                                     | 2025/2026                                                                                                            |            |     |
| Education level                             | Bachelor's studies                                                                                                                                                                                                                            |                                                          | Subject group                           |                                     | Obligatory subject group in the field of study<br>Subject group related to scientific research in the field of study |            |     |
| Mode of study                               | full-time studies                                                                                                                                                                                                                             |                                                          | Mode of delivery                        |                                     | at the university                                                                                                    |            |     |
| Year of study                               | 1                                                                                                                                                                                                                                             |                                                          | Language of instruction                 |                                     | English                                                                                                              |            |     |
| Semester of study                           | 2                                                                                                                                                                                                                                             |                                                          | ECTS credits                            |                                     | 3.0                                                                                                                  |            |     |
| Learning profile                            | academic                                                                                                                                                                                                                                      |                                                          | Assessment form                         |                                     | credit                                                                                                               |            |     |
| Conducting unit                             | Department of Statistics -> Faculty of Management -> Rector                                                                                                                                                                                   |                                                          |                                         |                                     |                                                                                                                      |            |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor                                                                                                                                                                                                                            |                                                          | dr hab. Ewa Wycinka                     |                                     |                                                                                                                      |            |     |
|                                             | Teachers                                                                                                                                                                                                                                      |                                                          |                                         |                                     |                                                                                                                      |            |     |
| Lesson types                                | Lesson type                                                                                                                                                                                                                                   | Lecture                                                  | Tutorial                                | Laboratory                          | Project                                                                                                              | Seminar    | SUM |
|                                             | Number of study hours                                                                                                                                                                                                                         | 0.0                                                      | 30.0                                    | 0.0                                 | 0.0                                                                                                                  | 0.0        | 30  |
|                                             | E-learning hours included: 0.0                                                                                                                                                                                                                |                                                          |                                         |                                     |                                                                                                                      |            |     |
| Learning activity and number of study hours | Learning activity                                                                                                                                                                                                                             | Participation in didactic classes included in study plan |                                         | Participation in consultation hours |                                                                                                                      | Self-study | SUM |
|                                             | Number of study hours                                                                                                                                                                                                                         | 30                                                       |                                         | 10.0                                |                                                                                                                      | 35.0       | 75  |
| Subject objectives                          | The aim of this course is to familiarize students with descriptive statistics concepts, such as how to collect and organize data, present it graphically, use statistical measures, and interpret their values to facilitate decision-making. |                                                          |                                         |                                     |                                                                                                                      |            |     |

| Learning outcomes | Course outcome                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Subject outcome                                                                                                                                                                                                                 | Method of verification                                                                                                       |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
|                   | [LML3_U01] is able to correctly interpret economic and social phenomena and apply knowledge of economics, finance, management sciences, logistics and mobility to explain economic phenomena                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | The student can interpret the results of statistical measures and identify the advantages and disadvantages of individual measures.                                                                                             | [SU2] presentation/project/paper/report<br>[SU4] test/exam - oral or written                                                 |
|                   | [LML3_K01] recognizes the importance of knowledge in the field of logistics and mobility in the process of identifying and solving economic problems, is ready to interact with other participants in the learning process, and consulting experts in case of difficulties in solving them on their own                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | The student can critically analyze research results, including those obtained by other entities. Questions and concerns arising during work on the project should be discussed with the course instructor during consultations. | [SK1] oral statement/conversation/discussion<br>[SK2] presentation/project/paper/report<br>[SK4] test/exam - oral or written |
|                   | [LML3_U03] is able to analyze the causes and course of specific logistics and mobility processes and systems, and accurately analyze these processes and systems with the help of adequate economic and social methods and tools                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | The student can use statistical methods to study the correlation and causality of phenomena. They can interpret the obtained results.                                                                                           | [SU2] presentation/project/paper/report<br>[SU4] test/exam - oral or written                                                 |
|                   | [LML3_U02] is able to use its theoretical knowledge and acquire data to analyze specific logistics and mobility processes and systems, and to analyze these processes and systems using methods developed in economics, finance, management science, logistics and mobility                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | The student can acquire data, organize it, and analyze it using appropriate methods.                                                                                                                                            | [SU2] presentation/project/paper/report                                                                                      |
|                   | [LML3_K02] is aware of the level of his knowledge in the field of logistics and mobility, understands the need to deepen and update this knowledge throughout life                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | The student is aware of their level of knowledge, can expand it, and use appropriate sources.                                                                                                                                   | [SK2] presentation/project/paper/report<br>[SK4] test/exam - oral or written                                                 |
|                   | [LML3_W06] knows to an advanced degree selected methods and tools, including statistical techniques, to describe and model logistics and mobility processes and systems                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | The student knows methods of organizing and visualizing data that allow for describing logistics processes and systems.                                                                                                         | [SW2] presentation/project/paper/report                                                                                      |
|                   | [LML3_W08] has knowledge of the main and logistics processes in companies, as well as the changes in these processes, knows what their causes, course, scale, consequences are and what is the impact of external stakeholders on them                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | The student has knowledge of methods for investigating regularities and relationships between analyzed phenomena, as well as methods for analyzing changes in phenomena over time.                                              | [SW4] test/exam - oral or written<br>[SW2] presentation/project/paper/report                                                 |
| Subject contents  | <ul style="list-style-type: none"> <li>• Basic Concepts of Statistics and Statistical Methods: This includes understanding terms like population, sample, and variable characteristics. It also covers statistical research methods, classification, survey design, and sampling techniques.</li> <li>• Data Processing: Summarizing, organizing, and grouping data. Creating tables, cross-tabulations, and graphical representations.</li> <li>• Descriptive Statistics: Classic and robust measures of central tendency (mean, weighted mean, median, mode) and measures of dispersion (range, variance, standard deviation, coefficient of variation, skewness).</li> <li>• Correlation Analysis: Scatter plots, correlation analysis, calculating and interpreting correlation coefficients, limitations of correlation analysis, applications, coefficient of determination, and regression variance analysis.</li> <li>• Regression: Linear regression with a single independent variable, measures of goodness of fit, regression limitations,</li> <li>• Time Series: Measures of dynamics, simple and composite indices, and trend functions.</li> </ul> |                                                                                                                                                                                                                                 |                                                                                                                              |

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|----------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------|
| Prerequisites and co-requisites                                | Basic Excel                                          |                                                                                                                    |                               |
|                                                                | Mathematics Applications in Economics and Management |                                                                                                                    |                               |
| Assessment methods and criteria                                | Subject passing criteria                             | Passing threshold                                                                                                  | Percentage of the final grade |
|                                                                | individual tasks                                     | 51.0%                                                                                                              | 30.0%                         |
|                                                                | tests                                                | 51.0%                                                                                                              | 40.0%                         |
|                                                                | group task                                           | 51.0%                                                                                                              | 30.0%                         |
| Recommended reading                                            | Basic literature                                     | Statistics for business and economics / Anderson [David R. et al.], Cengage Learning EMEA, 5th edition, cop. 2020. |                               |
|                                                                | Supplementary literature                             | Statistics for business and economics / Anderson [David R. et al.], Cengage Learning EMEA, 5th edition, cop. 2020. |                               |
|                                                                |                                                      | Applied business statistics : making better business decision / Ken Black, John Wiley & Sons, cop. 2011.           |                               |
|                                                                |                                                      | Complete business statistics / Amir D. Aczel, Jayavel Sounderpandian, McGraw-Hill Higher Education, 2009           |                               |
|                                                                | eResources addresses                                 |                                                                                                                    |                               |
| Example issues/<br>example questions/<br>tasks being completed |                                                      |                                                                                                                    |                               |
| Work placement                                                 | Not applicable                                       |                                                                                                                    |                               |

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